



EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT SECTION 313

EPCRA/TRI TRAINING MATERIALS

Reporting Year 2005

Spring 2006 Course

One Day Course: TRI Overview

Office of Environmental Information
Office of Information Analysis and Access (2844T)

February 2006

TRAINING DISCLAIMER

This document was developed for the sole purpose of helping potential reporters understand and comply with the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA). Nothing in this document is intended to independently alter, supplement, or revoke the statutory and/or regulatory requirements imposed by EPCRA section 313 and the applicable regulations at 40 CFR 372 et seq. Although these training materials provide an overview of the section 313 reporting requirements, facilities should consult the statute and regulations when developing threshold determinations and calculating releases and other waste management amounts. Facilities should be aware that EPA also provides guidance documents containing both sector specific guidance and guidance on specific elements of the EPCRA section 313 program. Covered facilities are encouraged to consult these guidance documents for additional assistance. Facilities should be aware that EPA may promulgate regulatory changes to the EPCRA section 313 program that may alter reporting requirements for future reporting years.

Toxics Release Inventory Reporting Requirements (EPCRA Section 313) – *Do I Need to Report?*

THE TRI PROCESS

1. **Is my facility covered under EPCRA Section 313 (TRI)?**
 - a. Review SIC Code Applicability
 - b. Employee Threshold Determination
2. **For which TRI chemicals must I submit a TRI report?**
 - a. How is the chemical used at the facility? Is it manufactured, processed or otherwise used?
 - b. How much of the chemical is manufactured, processed, or otherwise used at the facility? Are the TRI regulatory thresholds exceeded?
3. **How do I report?**
 - a. Submit a Form R or a Form A Certification Statement to EPA and state/tribal authority for each chemical requiring a report.
4. **What do I report?**
 - a. On-site releases of the chemical.
 - b. Off-site transfers of the chemical.
 - c. Pollution Prevention Activities.

WHO MUST REPORT?

■ Facility Level Determination

- Facilities (Private- and Public-sector)
 - » In covered primary SIC code(s) or Federal facilities; and
 - » With 10 or more full-time employees (equivalent of 20,000 hours per year); and

■ Chemical by Chemical Determination

- That also exceed manufacture, and/or process, and/or otherwise use thresholds for each Section 313 chemical

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COVERED SIC CODES

Industrial Sector	Primary SIC Code
Manufacturing	20-39
Metal mining	10 (except 1011, 1081, and 1094)
Coal mining	12 (except 1241)
Electrical utilities	4911, 4931, and 4939, limited to facilities that combust coal and/or oil for the purpose of generating electricity for distribution in commerce
Treatment, Storage, and Disposal facilities	4953, (limited to facilities regulated under the Resource Conservation and Recovery Act, Subtitle C, 42 U.S.C. Section 6921 et seq.)
Solvent recovery services	7389, limited to facilities primarily engaged in solvent recovery services on a contract
Chemical distributors	5169
Petroleum bulk terminals	5171

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FEDERAL FACILITIES

- **Federal facilities (covered by Executive Order 13148)**
 - Owned or operated by Executive Branch agencies:
 - » *Key Difference* - No restrictions based on SIC code
 - » Includes federal prisons, national parks, federal hospitals
 - With 10 or more full-time employees (equivalent of 20,000 hours per year)
 - That exceed manufacture, or process, or otherwise use thresholds
 - Agency responsible for reporting on activities conducted at Federal facilities

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SIC CODES

- Section 313 subjects facilities to reporting based on classification of primary activities in the Standard Industrial Classification (SIC) system (§372.22)
- On April 9, 1997 (62 FR 17288), the North American Industry Classification System (NAICS) was implemented
- SIC codes are to be used until EPA transitions to a system using NAICS codes
- Correspondence tables between 1997 NAICS and 1987 SIC can be found at www.census.gov/epcd/www/naicstab.htm. NAICS 1997 was last revised in 2002. NAICS 2002 correspondence tables can be found at www.census.gov/epcd/naics02.

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DEFINITION OF “FACILITY”

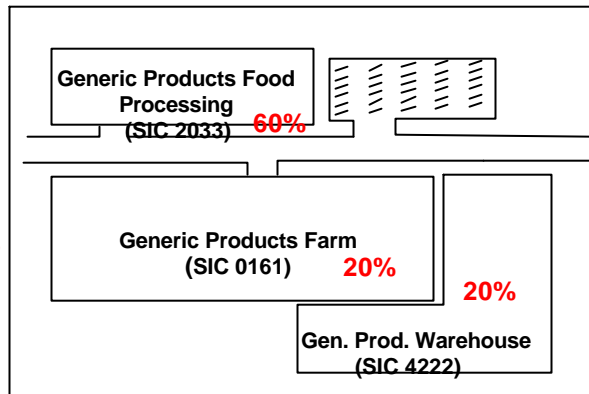
- Facility = the TRI reporting unit
 - Primary SIC code determination at facility level
 - Chemical threshold determinations made at facility level
- “Facility - all buildings, equipment, structures, and other stationary items which are located on a single site or contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with, such person).” (EPCRA §329(4))
 - Establishment (40 CFR §372.3)- unique and separate economic unit of a “facility”
 - Auxiliary facility - primarily supports a covered facility’s activities at another location. Takes on the SIC code of the establishment it serves

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MULTI-ESTABLISHMENT FACILITY- PRIMARY SIC CODE DETERMINATION

Three separate establishments located on contiguous/adjacent property owned by same person(s), is one facility under EPCRA (§372.22(b))

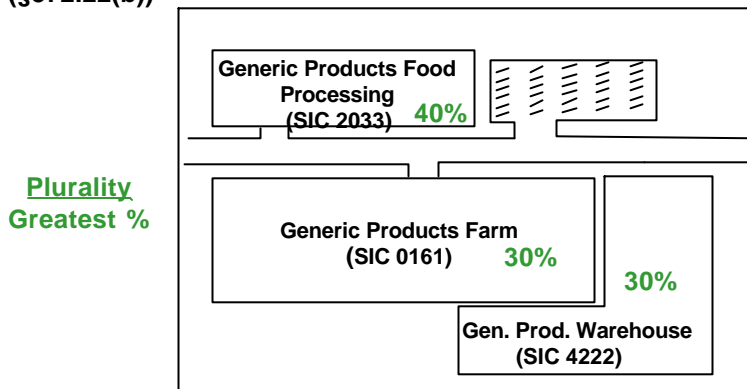
**Majority
Covered
establish-
ments >50%**



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MULTI-ESTABLISHMENT FACILITY- PRIMARY SIC CODE DETERMINATION

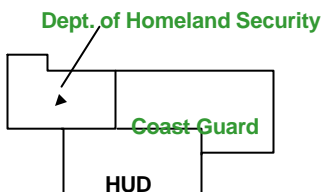
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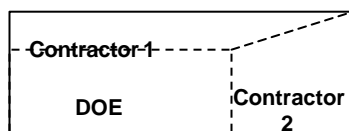
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MULTI-ESTABLISHMENT FACILITY- FEDERAL FACILITIES

- Determining how facilities report
 - Federal facilities and federal contractors (GOCOs)



Ex. 1: Two separate reporting facilities (HUD and DHS including Coast Guard)



Ex. 2: One reporting facility (DOE)

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EMPLOYEE THRESHOLD

- 10 full-time employee equivalents (i.e., 20,000 hours) (§§372.3 and 372.22(a))
 - Worked for the facility
 - Includes operational staff, administrative staff, contractors, dedicated sales staff, company drivers, off-site direct corporate support
 - Does NOT include contract drivers or janitorial contractors
 - Add all hours from part-time and full-time employees
- Determinations based on available time management systems/data

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FOR WHICH TRI-LISTED CHEMICALS MUST I SUBMIT A TRI REPORT?

What are the listed TRI chemicals?

1. Are any of these chemicals used or created at my facility?
2. Is the chemical involved in a TRI threshold activity at my facility?
 - Manufacture
 - Process
 - Otherwise Use
3. Does the quantity of the chemical used in a threshold activity at my facility exceed the TRI regulatory threshold?

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SECTION 313 CHEMICALS AND CHEMICAL CATEGORIES

- Current list contains over 600 individual chemicals and chemical categories (See Table II of the EPA's *TRI Reporting Forms and Instructions* document). There are 4 parts to the chemical list:
 - Chemicals with qualifiers
 - Individual chemicals alphabetically by name
 - Individual chemicals by CAS #
 - Chemical categories
- The list can change – check every year, changes listed in the front of the RF&I

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SECTION 313 CHEMICALS WITH QUALIFIERS

- Qualifiers - Listed chemicals with parenthetical qualifiers subject to TRI reporting only if manufactured, processed, or otherwise used in specified form (§372.25(g)). Below are some examples (see Table II of EPA's *TRI Reporting Forms and Instructions* document):

CHEMICAL	CAS#	QUALIFIER
Aluminum	7429-90-5	Fume or dust
Aluminum oxide	1344-28-1	Fibrous forms
Asbestos	1332-21-4	Friable forms
Isopropyl alcohol	67-63-0	Only manufacturers using strong acid process
Phosphorus	7723-14-0	Yellow or white
Saccharin	81-07-2	Manufacture only
Hydrochloric acid	7647-01-0	Acid aerosols
Sulfuric acid	7664-93-9	Acid aerosols
Vanadium	7440-62-2	Except when contained in alloy

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SECTION 313 CHEMICAL LIST

■ INDIVIDUAL CHEMICALS

52-53-3	Aniline	1.0	75-25-2	Bromoform (Tribromomethane)	1.0
90-04-0	o-Anisidine	0.1	74-83-9	Bromomethane	1.0
104-94-9	p-Anisidine	1.0		(Methyl bromide)	
134-29-2	o-Anisidine hydrochloride	0.1	75-63-8	Bromotrifluoromethane	1.0
120-12-7	Anthracene	1.0		(Halon 1301)	
7440-36-0	Antimony	1.0	1689-84-5	Bromoxynil	1.0
7440-38-2	Arsenic	0.1		(3,5-Dibromo-4-hydroxybenzonitrile)	
1332-21-4	Asbestos (friable)	0.1	1689-99-2	Bromoxynil octanoate	1.0

■ CHEMICAL CATEGORIES

N420 Lead Compounds (*)

Includes any unique chemical substance that contains lead as part of that chemical's infrastructure.

N450 Manganese Compounds (1.0)

Includes any unique chemical substance that contains manganese as part of that chemical's infrastructure.

N458 Mercury Compounds (*)

Includes any unique chemical substance that contains mercury as part of that chemical's infrastructure.

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CATEGORIES OF MANUFACTURING ACTIVITIES

■ Manufacturing (§372.3) - generating a Section 313 chemical

- Intentionally producing chemicals for:
 - » Sale
 - » Distribution
 - » On-site use or processing (e.g., intermediates)
- Coincidentally producing chemicals as impurities* or byproducts**:
 - » At any point at the facility, including waste treatment and fuel combustion
- Importing
 - » "Cause" to be imported

*Impurity=TRI chemical that still remains with the final facility product as it is distributed into commerce

**By-product=TRI chemical that is separated out from the process mixture before it becomes the final product

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CATEGORIES OF PROCESSING ACTIVITIES

- **Processing (§372.3) - preparation of a Section 313 chemical for distribution in commerce**
 - Using as a reactant to manufacture another substance or product
 - Adding as a formulation component
 - Incorporating as an article component
 - Repackaging for distribution
 - » Including quantities sent off-site for recycling
 - As an impurity

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REPACKAGING AS A PROCESSING ACTIVITY

- **Repackaging a Section 313 chemical for distribution in commerce is considered processing**
 - Repackaging includes transfer:
 - » From container to tanker truck and vice versa
 - » Between similar size containers
 - » Via pipeline to/from a tank
 - Repackaging does not include:
 - » Sampling without repackaging
 - » Re-labeling
- **Repackaging without distribution into commerce is not considered processing**

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OTHERWISE USE

- **Otherwise using (§372.3) - includes most activities that are not manufacturing or processing**
 - **Examples**
 - » **Chemical processing aid (e.g., solvents)**
 - » **Manufacturing aid (e.g., lubricants, refrigerants)**
 - » **Ancillary activities (e.g., chemicals used to remediate wastes)**

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OTHERWISE USE (CONTINUED)

- **Otherwise use of a Section 313 chemical also includes on-site disposal, stabilization (without subsequent distribution in commerce), or treatment for destruction if:**
 - **Section 313 chemical was received from off-site for the purposes of further waste management, or**
 - **Section 313 chemical was manufactured as a result of waste management activities on materials received from off-site for the purpose of further waste management**
- **Waste management activities include recycling, combustion for energy recovery, treatment for destruction, waste stabilization and release (including disposal)**

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ACTIVITIES THAT ARE NOT TRI THRESHOLD ACTIVITIES

- Activities that, alone, do NOT constitute a threshold activity
 - Storage
 - Remediation of on-site contamination (does not include chemicals manufactured during remediation)
 - Re-labeling without repackaging
 - Direct reuse onsite
 - On-site recycling
 - Transfers sent off-site for further waste management (not including recycling)

Note: While these activities are not included in the threshold determination, releases & wastes from these uses are not exempt from reporting if threshold is exceeded through other activities (unless specifically eligible for one of the reporting exemptions).

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THRESHOLD QUANTITY VS. RELEASE AND WASTE QUANTITIES

- Identify chemicals used at your facility which are on the EPCRA Section 313 chemical list for RY 2005.
- Identify if these chemicals are involved in a threshold activity; manufactured, and/or processed, and/or otherwise used.
- Calculate each quantity of chemical that is manufactured, processed, or otherwise used. This is your threshold quantity.
- The threshold quantity determines if TRI reporting is required.
- Record the threshold quantity in your notes, this is important information. **THIS QUANTITY IS NOT RECORDED ON THE FORM R.**

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THRESHOLD QUANTITY VS. RELEASE AND WASTE QUANTITIES

- IF threshold quantity exceeds regulatory threshold for manufacture, process, or otherwise use, you must report for this chemical.
- NOW – look at the Form R and begin gathering and calculating needed information, primarily related to chemical releases and other waste management quantities.
- REPEAT – Threshold quantities are not recorded on the Form R, they are calculated to determine whether or not a Form R (or A) must be filed.

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THRESHOLDS TRIGGERING EPCRA SECTION 313 REPORTING

- Non-PBT Chemical Thresholds: A facility meeting the SIC code (or Federal facility) and employee criteria must file a TRI report for a non-PBT Section 313 chemical if the facility (§372.25):
 - Manufactured (including imported) more than 25,000 pounds per year, or
 - Processed more than 25,000 pounds per year, or
 - Otherwise used more than 10,000 pounds per year
- Activity thresholds are calculated independently
- Threshold calculations are based on cumulative quantities per Section 313 chemical over the reporting year

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PBT THRESHOLDS TRIGGERING EPCRA SECTION 313 REPORTING

- Section 313 chemicals that are listed as persistent, bioaccumulative, and toxic (PBT) are subject to separate and lower thresholds (§372.28)
- If a facility manufactures, processes, or otherwise uses any chemicals that are listed as persistent, bioaccumulative, and toxic (PBT), the threshold quantity is one of the following per Section 313 chemical or category per year (§372.28):

Threshold Level	Type of PBT Chemical
100 pounds	Persistent and bioaccumulative
10 pounds	Highly persistent and highly bioaccumulative
0.1 grams	Dioxin and dioxin-like compounds

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CALCULATING ACTIVITY THRESHOLDS

- The threshold quantity is the total amount manufactured, processed, or otherwise used, NOT the amount released.
- Calculate total amount of Section 313 chemical to a threshold activity
 - Example:
 - » A plant uses benzene to manufacture liquid industrial adhesive for distribution in commerce. The plant adds 27,000 pounds of benzene to the liquid adhesive-making operation during the reporting year, but 3,000 pounds are volatilized during the operation
 - » 27,000 pounds of benzene is processed, reporting required

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THRESHOLD DETERMINATION FOR COMPOUND CATEGORIES

- **Count together all compounds that fall within a category, even if different compounds within a category are used in separate operations**
 - Example: If a facility processes 20,000 pounds of 2-Butoxyethanol in one operation and 10,000 pounds of 2-(2-Butoxyethoxy)ethanol in another operation during the reporting year
 - » 30,000 pounds of glycol ethers have been processed. Reporting for glycol ethers category is required
- **Consider the entire weight of the compounds in the category when determining thresholds**
 - Calculations for release and other waste management estimates are different for metal and nitrate compounds

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SUPPLIER NOTIFICATION FOR MIXTURES AND OTHER TRADE NAME PRODUCTS

- **Supplier notification (§372.45) - requires suppliers to facilities described in §372.22 (i.e., covered facilities) to:**
 - Identify Section 313 chemical(s) by name and CAS number
 - Identify Section 313 chemical(s) as being subject to Section 313 requirements
 - Provide concentration (or range) of Section 313 chemicals in mixtures and other trade name products (not wastes)
 - Provide notification at least annually in writing or attached to the MSDS
 - Update notification when changes occur
 - Only facilities in primary SIC codes 20-39 must initiate the notification
- **Check Section 15 of the MSDS, Regulatory Information. It will state any chemicals subject to EPCRA Section 313 (TRI).**

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DETERMINING THRESHOLD FOR TRI CHEMICALS CONTAINED IN MIXTURES

- For the threshold quantity, only include the portion of the TRI chemical in the mixture, not the weight of the entire mixture.
- The *de minimis* exemption applies to non-PBT chemicals contained in mixtures at less than 1.0% or 0.1% (for carcinogens).
 - The *de minimis* exemption is related to the concentration of the chemical in a mixture, NOT the quantity of the mixture used.
- A metal alloy is a solid mixture. Multiply the percentage of the TRI chemical in the alloy by the total weight of alloy used to determine threshold quantity.

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DETERMINING CONCENTRATIONS IN MIXTURES OR OTHER TRADE NAME PRODUCTS

- Include a Section 313 chemical in the threshold determinations if you know (§372.30(b)(3)):
- Exact concentration - use concentration provided:
 - » MSDS = 25% Use 25%
- Upper bound - use upper limit
 - » MSDS < 25% Use 25%
- Range - use the midpoint of the range
 - » MSDS: 30 – 50% Use 40%
- Lower bound - subtract out other known constituents, create a range, and use the midpoint of range
 - » MSDS: >75% toxic chemical Use 87.5% (top of range = 100%)
 - » MSDS: >75% toxic chemical Use 80% (range = 75% - 85%)
 15% water

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MEETING MULTIPLE THRESHOLDS

- There are many situations where one Section 313 chemical must be counted towards multiple activity thresholds
 - Section 313 chemicals manufactured or imported on-site (manufactured), then used or incorporated into a product (processed)
 - Section 313 chemicals produced during destruction of wastes received from off-site (manufactured) and subsequently destroyed on-site (otherwise used)
 - Section 313 chemicals that are otherwise used on-site (otherwise used), and then recycled off-site (processed)
- Section 313 chemicals should not be counted twice towards the same activity threshold
- Thresholds are evaluated independently. You must file a TRI report for a chemical if you exceed one OR two OR all three thresholds (manufacture / process / otherwise use).

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WATCH FOR DOUBLE COUNTING WITHIN THE SAME ACTIVITY THRESHOLD!!!

- **Example:** If a chemical is blended into a product mixture, and then this mixture is packaged for sale into 55 gallon drums, these are both processing activities, the chemical is “processed” twice. Only count this quantity once towards the processing threshold.
 - During 2005, 20,000 lbs of toluene were blended with other chemicals to create a paint product.
 - The paint product (containing the 20,000 lbs of toluene) was then packaged into 55 gallons drums for sale.
 - The processing threshold quantity for this facility for 2005 = 20,000 lbs

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THRESHOLD DETERMINATIONS WITH RECYCLING AND REUSE

- For threshold determinations, Section 313 chemicals reused or recycled at a facility: count original amount used only once (§372.25(e))
 - Note: Section 313 chemicals sent off-site for recycling (processed) and returned to the facility are considered new materials and counted for threshold determinations
- For materials in use from previous years: count only the quantity added during current reporting year towards threshold

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MULTI-ESTABLISHMENT FACILITY

- Determining how facilities report
 - Multi-establishment facility (§372.30(c))
 - » Apply threshold determinations on aggregate amount of chemicals used at facility
 - » Able to file separate Form R reports for each part of the facility (e.g., establishment or grouping of establishments) and the Form Rs must be designated as “part of a facility” in Part I, Section 4.2
 - » Report all non-exempt releases and other waste management activities of reportable Section 313 chemicals for all parts of a facility
 - » Avoid double-counting at the facility of chemicals involved in intra-facility transfers

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CALCULATING THRESHOLDS

- Consider all activities
- Consider all sources
- Identify the avenues through which mixtures and trade name products enter your facility
 - Purchasing/inventory control
 - Contractors
 - Bulk deliveries
 - Capital purchases
 - “Credit card” or “emergency” purchases
 - Chemicals used in neutralization, refrigerants, cleaners, paints, lubricants (for non-vehicles), fuel (for non-vehicles), refractory bricks

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ORCHESTRATING DATA COLLECTION

- Methods for orchestrating data collection
 - Coordinate with purchasing/vendors
 - Develop inventory controls
 - Require requisition or “sign out” procedure for Section 313 chemicals
 - Take year-end inventories
- Identify ALL chemical purchasing and usage
- Threshold determination worksheets for both PBT and non-PBT Section 313 chemicals

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EXAMPLE: EPCRA Section 313 Non-PBT Chemical Reporting Threshold Worksheet

Facility Name: OMNICHIMICAL Date Worksheet Prepared: _____
 Toxic Chemical or Chemical Category: Toluene Prepared By: J.S.P.
 Reporting Year: _____

Step 1. Identify amounts of the toxic chemical manufactured, processed, or otherwise used.

Mixture Name or Other Identifier	Information Source	Percent by Weight	Total Weight (in lbs)	Amount of the Listed Toxic Chemical by Activity (in lbs):		
				Manufactured	Processed	Otherwise Used
1. Joe's Degreaser	Purchasing	50	10,000			5,000
2. Yellow Bathroom Paint	Vendor	5	30,000			1,500
3. Parts Washer Fluid	Purchasing	40	10,000			4,000
4.						
5.						
6.						
7.						
Subtotal:				(A) _____ lbs.	(B) _____ lbs.	(C) <u>10,500</u> lbs.

Step 2. Identify exempt forms of the toxic chemical that have been included in Step 1.

Mixture Name as Listed Above	Applicable Exemption	Note Fraction or Percent Exempt (if Applicable)	Exempt Amount of the Toxic Chemical from Above (in lbs):		
			Manufactured	Processed	Otherwise Used
1. Yellow Bathroom Paint	Struct. Comp.	100			1,500
2.					
3.					
4.					
5.					
6.					
7.					
Subtotal:			(A ₁) _____ lbs.	(B ₁) _____ lbs.	(C ₁) <u>1,500</u> lbs.

Step 3. Calculate the amount subject to threshold: (A - A₁) _____ lbs. (B - B₁) _____ lbs. (C - C₁) 9,000 lbs.

Compare to thresholds for section 313 reporting. 25,000 lbs. 25,000 lbs. 10,000 lbs.

If any threshold is met, reporting is required for all activities. Do not submit this worksheet with Form R. Retain for your records.

MANAGEMENT PRACTICES

■ Begin early

- Implement a program to gather “real-time” data on usage
- Searches for historical information can be difficult

■ Use a team approach

- Include all relevant personnel (e.g., engineering, environmental, operations)
- Spread the work

RECORDKEEPING

- **Detailed records**
 - Improve reporting accuracy and data quality
 - Reduce replication of effort from year to year
- **Well-labeled calculations and assumptions**
 - Serve as standard operating procedures (SOPs) for future years
 - Ensure consistency from year to year, especially if personnel responsible for reporting change
- **EPA will review records during a data quality audit**

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HOW TO REPORT

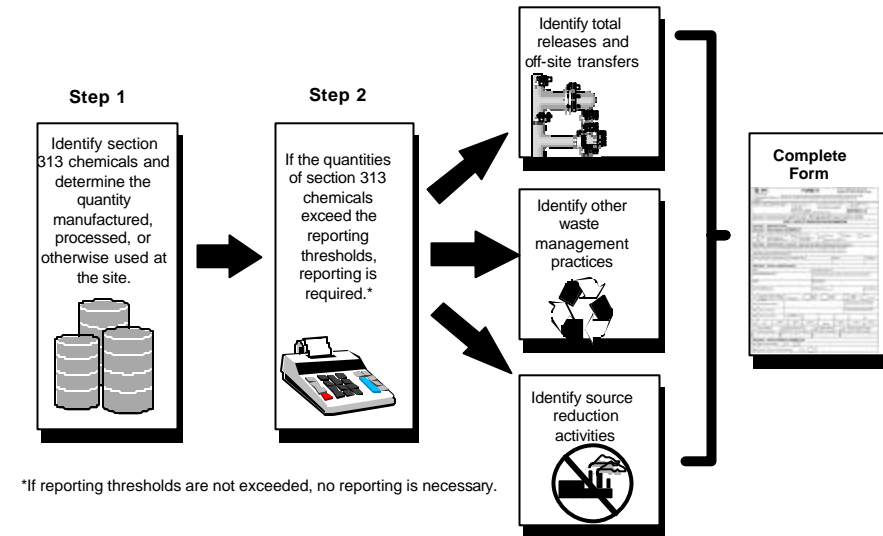
- **File a TRI report (a Form R or a Form A Certification Statement) for each Section 313 chemical exceeding an activity threshold**
- **Submit to U.S. EPA, and either designated state officials or designated tribal office by July 1st for preceding calendar year's activities**
 - July 1, 2006 (January 1 - December 31, 2005 activities)
- **Use of TRI-ME software for forms preparation and CDX for electronic submission are very strongly recommended.**

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THE TRI FORMS

THE FORM R

THE EPCRA SECTION 313 REPORTING PROCESS



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TRI REPORTING SOFTWARE

- The *TRI-Made Easy (TRI-ME)* Reporting Software will be mailed to facilities who have reported in the past two years with the Reporting Forms and Instructions package. *TRI-ME* can also be downloaded from www.epa.gov/tri.
- The *TRI-ME* software is an interactive, intelligent, user-friendly software program that assists facilities in determining and completing their TRI reporting obligations.
- *TRI-ME* also promotes internet, paperless reporting!
- *TRI-ME* allows users to access and search the *TRI Assistance Library*. *TRI-ME* is intelligently linked to the *TRI Assistance Library* so that the user can view pre-selected TRI definitions and guidance from the *TRI Assistance Library* that are relevant to specific *TRI-ME* screens.
- **USE OF TRI-ME REDUCES ERRORS**

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TRI-ME Tutorials

- For Reporting Year 2005, the TRI Program has introduced the *TRI-ME Tutorials*. Each tutorial is approximately four minutes long and offers several help topics that will assist users with their TRI reporting experience
- The tutorials can be viewed at:
 - <http://www.epa.gov/tri/report/trime/tutorials/>
- To view the TRI-ME Tutorials, you must have the following:
 - Internet access
 - Web Browser (Internet Explorer, Netscape, etc.)
 - Macromedia Flash capability
 - Use the following link to check if your computer has Macromedia Flash (<http://www.macromedia.com/shockwave/welcome/>)
 - Speakers/headset to listen to the audio

B-5

BEST PRACTICE: RECORDKEEPING

- Importance of good recordkeeping
 - Detailed records improve reporting accuracy and data quality
 - Well-labeled calculations and engineering assumptions serve as standard operating procedures for future years
 - » Reduce replication
 - » Ensure consistency
- Requirements
 - All records used to complete Form R reports must be kept for three years (40 CFR 372.10)
 - EPA will review records during a data quality audit

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PART I: FACILITY LEVEL INFORMATION

Sections 1 - 3

- **Section 1:** Reporting year is the calendar year to which the reported information applies; not the year in which the form is submitted. This is RY 2005.
- **Section 2:** Trade secret submissions require rigorous substantiation (40 CFR 350) and are not typical.
- **Section 3:** An original signature is required
 - Name must be legible (printed or typed)
 - Title of the official who signs is also required
 - *If you submit via CDX you will use an electronic signature*

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PART I: FACILITY LEVEL INFORMATION

Section 4 – Facility Identification

- **4.1**
 - All parts of the facility name and address are essential
 - Mailing address required if different from street address
 - TRI facility identification number (if a form was filed in a previous reporting year) or “New Facility” (if reporting for the first time)
 - All establishments at one facility should use the same TRI facility identification number (if reporting separately)
 - *Federal facilities*
 - » Enter name of Federal department or agency standard acronym followed by the site name
- **4.2** Specify whether the form covers all or part of the facility
 - Federal facilities and GOCOs also check either “c” or “d,” but not both

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PART I: FACILITY LEVEL INFORMATION

Section 4 – Facility Identification

- 4.3 and 4.4
 - List name and phone number
 - » Technical contact - should be able to explain data to EPA
 - EPA encourages facilities to provide an email address for the technical contact
 - » Public contact - should be able to represent the facility's data to the public
- 4.5
 - Enter covered 4-digit SIC code(s)
 - Enter primary SIC code in first box (a.)
 - Enter other covered SIC codes in decreasing order of significance
- 4.6 Dun and Bradstreet number(s)

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PART I: FACILITY LEVEL INFORMATION

Section 5 – Parent Company Information

- 5.1 and 5.2: Name of Parent Company and Parent Company D & B Number
 - Private-sector and GOCO facilities:
 - » Enter complete name and Dun & Bradstreet number of parent company
 - Federal facilities:
 - » Enter the complete name of department or agency for parent company (e.g., U.S. Department of Interior)
 - » Check “NA” for Dun & Bradstreet number of parent company
 - To identify the correct parent company: go up to the highest level of ownership within the U.S.

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PART II: CHEMICAL-SPECIFIC INFORMATION

Sections 1 and 2	Toxic Chemical Identity
Section 3	Description of Chemical Use
Section 4	Maximum Amount On-site at any time
Section 5	On-site Releases of the Chemical
Section 6	Off-Site Transfers of Wastes Containing the Chemical
Section 7	Description of On-Site Treatment, Energy Recovery and Recycling
Section 8	Pollution Prevention Information

Important Note: Quantities of the TRI Chemical that remained in the facility's PRODUCT must be counted toward thresholds but are NOT reported on the Form R

B-11

PART II. Sections 1 and 2: Toxic Chemical or Mixture Identity

- Complete either Sections 1.1 & 1.2 or Section 1.3 or Section 2
- 1.1 or 1.2: Enter CAS number or category code and name of Section 313 chemical or chemical category (except on "sanitized" form)
- 1.3: Enter generic name only if claiming Section 313 chemical name as a trade secret (40 CFR 350)
- 2.1: If supplier claims trade secret, report generic name by supplier

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PART II. Section 3: Activities and Uses of the Chemical at the Facility

- Specify use(s) of the Section 313 chemical: manufacture, process, or otherwise use
- Report only activities taking place at reporting facility
- Check all applicable boxes

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY (Important: Check all that apply)		
3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. <input type="checkbox"/> Produce b. <input type="checkbox"/> Import <u>If produce or import:</u> c. <input type="checkbox"/> For on-site use/processing d. <input type="checkbox"/> For sale/distribution e. <input type="checkbox"/> As a byproduct f. <input type="checkbox"/> As an impurity	a. <input type="checkbox"/> As a reactant b. <input type="checkbox"/> As a formulation component c. <input type="checkbox"/> As an article component d. <input type="checkbox"/> Repackaging e. <input type="checkbox"/> As an impurity	a. <input type="checkbox"/> As a chemical processing aid b. <input type="checkbox"/> As a manufacturing aid c. <input type="checkbox"/> Ancillary or other use

B-13

PART II. Section 4: Maximum Amount of the Toxic Chemical On-Site at Any Time During the Year

- Insert appropriate code from instructions indicating the maximum quantity on-site
- Use maximum total (non-exempt) amount present at one time during reporting year, even if the Section 313 chemical is present at more than one location at the facility
 - Based on amount in storage, process, and wastes
 - May not be the same as Tier II maximum amount on site
 - »Tier II is usually by mixtures, Form R is chemical-specific
 - »Tier II excludes hazardous wastes, Form R does not

B-14

TOOLS AND DATA SOURCES FOR CALCULATING RELEASE ESTIMATES

Part II, Sections 5 and 6 require generation of quantitative estimates. Potential assistance sources include:

- Process flow diagrams
- Waste management manifests, invoices, and waste profiles
- Environmental monitoring data
- Permit applications
- RCRA (BRS), NPDES, CAA, CERCLA and other env. reports
- Engineering calculations and other notes
- EPA TRI guidance documents (available at www.epa.gov/tri)

**USE BEST AVAILABLE DATA AND YOU
DETERMINE BEST APPROACH**

B-15

TECHNIQUES FOR ESTIMATING CHEMICAL QUANTITIES

One of the following basis of estimate codes must be listed on the Form R for each release and waste management quantity reported:

- Use of monitoring data (M)
- Mass balance calculation (C)
- Use of published emission factors (E)
- Engineering calculations (O)
 - Everything NOT M, C, or E above, such as:
 - Best engineering judgement
 - Equipment efficiency specs
 - Non-chemical-specific and non-published emission factors
- Use the code on the Form R for the method used to estimate the largest portion of the release

B-16

“NA” VS. “0”

All data elements in Sections 5 and 6 must be completed. If you determine there was no release or transfer quantity:

- Use “NA” (not applicable) when no possibility of the Section 313 chemical being released to or otherwise managed as waste in that media (e.g., facility has no on-site landfill)

OR

- Use “0” when no release occurs or ≤ 0.5 pound of a non-PBT Section 313 chemical from a waste stream is directed towards that medium
 - Example: Discharge to water is zero; however, release possible if control equipment fails
 - Must indicate a Basis of Estimate code (i.e., M, C, E, O) for all numerical estimates, including “0”

B-17

PART II. Section 5: Quantity of the Toxic Chemical Entering Each Environmental Medium

- Report total releases of the Section 313 chemical to each environmental medium on-site (air, water, land)
- In column A, Total Release, report total quantity
 - A range code can be used for non-PBT Section 313 chemical quantities less than 1,000 pounds
 - » A = 1 - 10 pounds
 - » B = 11 - 499 pounds
 - » C = 500 - 999 pounds

B-18

PART II. Section 5.1: Fugitive or Non-Point Air Emissions

Enter total fugitive releases of the Section 313 chemical in column A, including leaks, evaporative losses, building ventilation, or other non-point air emissions

EXAMPLE Using a *Mass Balance* Basis of Estimate (C):

5,000 lbs of a volatile solvent are added during the year as part of the manufacture of a liquid adhesive. 4,950 lbs of the solvent are contained in the final liquid adhesive product.

Law of Mass Balance: What Goes In = What Comes Out

Input (5,000 lbs) = Output (4,950 lbs) + Air Loss (50 lbs)

Fugitive air emissions from this process = 50 lbs

B-19

PART II. Section 5.2: Stack or Point-Source Air Emissions

- Enter total releases to air from point sources, including stacks, vents, pipes, ducts, storage tanks, or other confined air streams
- Data sources/tools
 - » Air permit applications
 - » CAA Title V air inventories
 - » Process and production data
 - » Emission factors
- EXAMPLE using an *Emission Factor* basis of estimate (E):
 - » 500,000 tons of coal are combusted in a fluidized bed combustor
 - » EPA emission factor: 0.11 lb mercury emitted / 1,000,000 lb coal combusted
 - » $500,000 \text{ tons} \times 2,000 \text{ pounds / ton} \times (0.11 \text{ lb mercury} / 1,000,000 \text{ lb coal}) = 110 \text{ lbs. Mercury}$
 - » 110 pounds of mercury are released through the stack

B-20

PART II. Section 5: On-Site Wastewater Discharges

- **Section 5.3 Releases to streams or water bodies**
 - Enter names of streams or water bodies to which your facility directly discharges the Section 313 chemical. If there is no name, enter the closest stream or water body with a name
 - Enter total amount of releases to each receiving stream or water body in column A; include amounts from stormwater runoff, if available
 - Indicate in column C the percentage of the total quantity (by weight) of the Section 313 chemical contributed by stormwater
- **Potential release sources**
 - Wastewater treatment facility discharge
 - Storm drains
- **Potential Data Sources and Tools**
 - DMRs or other required monitoring data
 - NPDES permits/permit applications
 - Process knowledge and/or mass balance

B-21

CALCULATING WASTEWATER DISCHARGES

- **Example using a *Monitoring Data* Basis of Estimate (M)**
Calculation:

<u>Date</u>	<u>Conc. (ppm)</u>	<u>Flow (MGD*)</u>	<u>Amt. (lbs./day)</u>
3/1	1.0	1.0	8.33
9/8	0.2	1.0	1.66
1.0 /million x 1.0 million gallons/day x 8.33 lbs/gallon=			8.33lbs/day
0.2 /million x 1.0 million gallons/day x 8.33 lbs/gallon=			1.67lbs/day
Average =			5.00 lbs/day

5.00 lbs./day x 365 days/yr. = 1,825 lbs./yr.

1,825 lbs of methanol are discharged to Streams or Water Bodies

*MGD = million gallons per day

B-22

PART II. Section 5: On-Site Injection Wells

■ Section 5.4.1 Underground injection to Class I wells

- Enter total amount of Section 313 chemical injected into Class I wells at facility in column A and basis of estimate code in column B

■ Section 5.4.2 Underground injection to Class II - V wells

- Enter total amount of Section 313 chemical injected into Class II - V wells at facility in column A and basis of estimate code in column B

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE (continued)				
		NA	A. Total Release (pounds/ year*) (enter range code** or estimate)	B. Basis of Estimate (enter code)
5.4.1	Underground injections on-site to Class I Wells	<input type="checkbox"/>		
5.4.2	Underground injections on-site to Class II-V Wells	<input type="checkbox"/>		

B-23

PART II. Section 5: Releases to Land On-Site

■ Section 5.5 Releases to land on-site

- Other disposal (5.5.4) includes spills or leaks of the Section 313 chemical to land
- Quantities of Section 313 chemicals released to air or water during the reporting year of the initial release to land (e.g., volatilization from surface impoundments) are not included here

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE (continued)				
		NA	A. Total Release (pounds/year*)(enter range code or estimate**)	B. Basis of Estimate (enter code)
5.4.1	Underground Injection onsite to Class I Wells	<input type="checkbox"/>		
5.4.2	Underground Injection onsite to Class II-V Wells	<input type="checkbox"/>		
5.5	Disposal to land onsite	<input type="checkbox"/>		
5.5.1A	RCRA Subtitle C landfills	<input type="checkbox"/>		
5.5.1B	Other landfills	<input type="checkbox"/>		
5.5.2	Land treatment/application farming	<input type="checkbox"/>		
5.5.3A	RCRA Subtitle C surface impoundments	<input type="checkbox"/>		
5.5.3B	Other surface impoundments	<input type="checkbox"/>		
5.5.4	Other disposal	<input type="checkbox"/>		

B-24

PART II. Section 6: Transfers to Off-Site Locations

- Includes both off-site location information and quantities of Section 313 chemicals transferred to off-site locations
- Report quantities of a Section 313 chemical sent off-site to any POTW or other location for recycling, energy recovery, waste treatment, or disposal
- Report only total quantity of a Section 313 chemical transferred off-site, not entire waste
- In Sections 6.1 and 6.2, Total Transfers, report total quantity
 - A range code can be used for non-PBT Section 313 chemical quantities less than 1,000 pounds
 - » A = 1 - 10 pounds
 - » B = 11 - 499 pounds
 - » C = 500 - 999 pounds

B-25

PART II. Section 6: Transfers to POTWs

- Section 6.1 Discharges to publicly owned treatment works
 - Section 6.1A: Enter total quantity of the Section 313 chemical transferred to all POTWs and basis of estimate
 - Section 6.1.B: POTW name and location for each POTW

- Example using an *Engineering Calculations* basis of estimate (O):

A wet grinding process generates wastewater with 300 lbs of lead (contained in particulates) during the year. This wastewater undergoes on-site filtration prior to being sent to the POTW. Manuals from the filter equipment vendor indicate a 95% removal efficiency for particulates of this size.

$300 \times 0.95 = 285$ lbs removed from the wastewater

$300 - 285 = 15$ pounds remaining in the wastewater after filtration

15 pounds of lead are transferred off-site to the POTW

B-26

PART II. Section 6: Transfers to Other Off-Site Locations

■ Section 6.2 Transfers to other off-site locations

- Include name, address, and EPA identification (RCRA ID) number of the receiving facility
- Enter quantity, basis of estimate, and M code for each different waste management activity (waste treatment, disposal, recycling, and energy recovery)

■ Data/tools

- Waste manifests and vendor receipts
- RCRA reports
- Waste characterization - analyses, profiles

B-27

RELEASE ESTIMATES

■ Helpful hints for accurate release estimates

- Always use your best available information
- Estimate the quantity of Section 313 chemical, not the entire waste stream
- Differentiate fugitive from stack emissions
- Zero air emissions for VOCs are unlikely
- Watch out for releases of Section 313 chemicals with qualifiers
- Check your math and document your work!

■ Result of release estimation errors

- Incorrect release estimates and inconsistencies from year to year

B-28

REFERENCE SOURCES

- EPA Industry Guidance located at <http://www.epa.gov/tri>
- *AP-42: Compilation of Air Pollutant Emission Factors* located at <http://www.epa.gov/ttn/chief>
- Technology Transfer Network located at <http://www.epa.gov/ttn>
 - AP-42
 - WATER9 program
 - » Updates WATER8, CHEMDAT8, and CHEM9
 - TANKS program
- *Perry's Chemical Engineer's Handbook; CRC Handbook of Chemistry and Physics; Lange's Handbook of Chemistry*

B-29

PART II. Section 7: On-Site Waste Management

Examples of on-site waste management (Section 7)

- Air pollution control devices (Section 7A)
- Wastewater treatment processes (Section 7A)
- Energy recovery devices (Section 7B)
- Recycling devices (Section 7C)

B-30

PART II. Section 7A: On-Site Waste Treatment Methods and Efficiency

- Report each waste treatment method that the Section 313 chemical undergoes
 - Include even if method has no effect on the Section 313 chemical
- Only data element in Form R focusing on the entire waste stream rather than the Section 313 chemical in the waste stream

SECTION 7A. ON-SITE WASTE TREATMENT METHODS AND EFFICIENCY					
<input type="checkbox"/> Not Applicable (NA) - Check here if <u>no</u> on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.					
a. General Waste Stream (enter code)	b. Waste Treatment Method(s) Sequence (enter 3 - or 4 - character code(s))				d. Waste Treatment Efficiency (enter 2 character code)
7A.1a	7A.1b	1	2		7A.1d
		3	4	5	
		6	7	8	

B-31

PART II. Section 7B: On-Site Energy Recovery Processes

- Enter on-site energy recovery methods for Section 313 chemical
 - Section 313 chemical must be combustible and have a significant heating value (5,000 BTU/lb.)
 - Combustion unit is integrated into an energy recovery system (e.g., industrial furnace, industrial kiln, or boiler)
- Enter codes in descending order by quantities combusted

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES		
<input type="checkbox"/> Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.		
Energy Recovery Methods (enter 3-character code(s))		
1	2	3

B-32

PART II. Section 7C: On-Site Recycling Processes

■ Enter methods used for on-site recycling of the Section 313 chemical

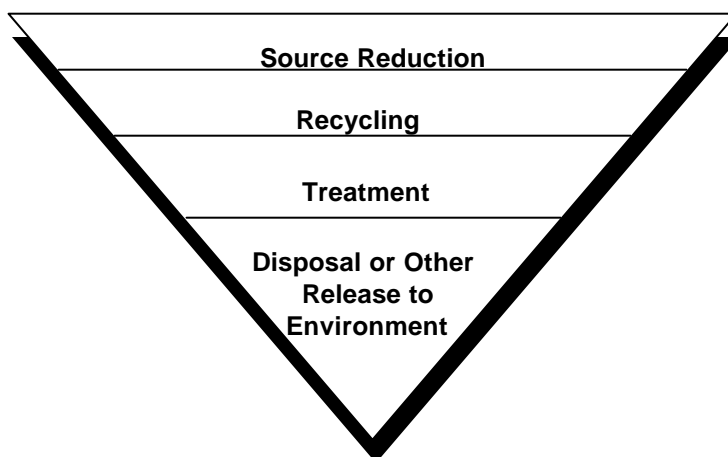
- Codes for recycling methods used are found in EPA's *TRI Reporting Forms and Instructions* document
- Do not include energy recovery processes

■ Enter codes in descending order by quantities recycled

SECTION 7C. ON-SITE RECYCLING PROCESSES			
<input type="checkbox"/> Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.			
Recycling Methods [enter 3-character code(s)]			
1	<input type="text"/>	2	<input type="text"/>
		3	<input type="text"/>

B-33

POLLUTION PREVENTION HIERARCHY



B-34

SECTION 8 REPORTING

- The sum of sections 8.1 through 8.7 represents the total quantity of waste generated through regular production activities at your facility for the reporting year.
 - This total quantity is then divided across the different subsections depending on how the waste was managed: released, treated, recycled, or energy recovered.
 - Quantities needed for 8.1, 8.3, 8.5, and 8.7 have already been determined for Sections 5 and 6, simply allocate into appropriate Section 8 subsection.
 - Quantities for 8.2, 8.4, and 8.6 must be determined for this section.
- Section 8.8 includes releases (including on-site and off-site disposal) and other off-site waste management activities resulting from remedial actions, catastrophic events, or one-time events not associated with the regular production process.
- The TRI-ME validation process will compare your Section 8 numbers with Sections 5 and 6

B-35

RELEASES AND OTHER WASTE MANAGEMENT Part II. Sections 8.1 through 8.7

8.1a	Total on-site disposal to Class I UI wells, RCRA & other landfills 5.4.1 + 5.5.1A + 5.5.1B – 8.8 (on-site release or disposal due to catastrophic event)
8.1b	Total other on-site disposal or other releases 5.1, 5.2, 5.3.1, 5.3.2, 5.3.3, 5.4.2, 5.5.2, 5.5.3A, 5.5.3B, 5.5.4) – 8.8 (on-site release or disposal due to catastrophic event)
8.1c	Total off-site disposal to Class I UI wells, RCRA & other landfills Section 6.2, M64, M65, and M81 – 8.8 (off-site disposal due to catastrophic event)
8.1d	Total other off-site disposal or other releases 6.1 (for metals and metal category compounds only) + Section 6.2 (quantities associated with M codes M10, M41, M62, M66, M67, M73, M79, M82, M90, M94, M99) – 8.8 (off-site disposal due to catastrophic event)
8.3	Off-site energy recovery 6.2, M56 and M92 – 8.8 (off-site energy recovery due to catastrophic events)
8.5	Off-site recycling 6.2, M20, M24, M26, M28, and M93 – 8.8 (off-site recycling due to catastrophic events)
8.7	Off-site treatment 6.1 (excluding metals and metal category compound), 6.2, M50, M54, M61, M69, M95 – 8.8 (off-site treatment due to catastrophic event)

B-36

RELEASES AND OTHER WASTE MANAGEMENT Part II. Sections 8.1 through 8.7

8.2	On-Site Energy Recovery <ul style="list-style-type: none">■ Determine quantity for activities described in 7B■ Report quantity actually combusted in energy recovery unit (i.e., consider efficiency)
8.4	On-Site Recycling <ul style="list-style-type: none">■ Determine quantity for activities described in 7C■ Report quantity actually recycled (i.e., consider efficiency)
8.6	On-Site Treatment <ul style="list-style-type: none">■ Determine quantity for activities described in 7A■ Report quantity actually destroyed (i.e., consider efficiency)■ Metals and metal category compounds cannot be reported here

B-37

REMEDIAL, CATASTROPHIC, OR ONE-TIME RELEASES

- **Section 8.8: Remedial, catastrophic, or one-time releases**
 - Quantity of Section 313 chemical released into the environment or transferred off-site as a result of:
 - » Remediation
 - » Catastrophic events (e.g., earthquake, hurricane, fire, floods)
 - » One-time events not associated with production processes (e.g., pipe rupture due to unexpected weather)
 - Does not include Section 313 chemicals treated, recovered for energy, or recycled ON-SITE
 - Excludes quantities in Sections 8.1 through 8.7

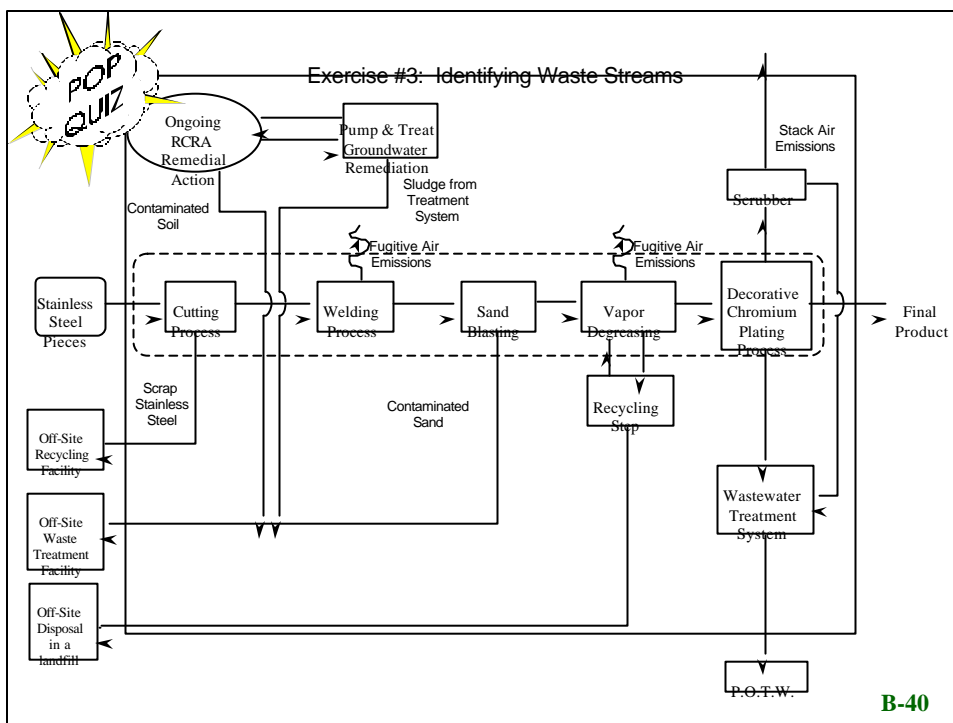
B-38

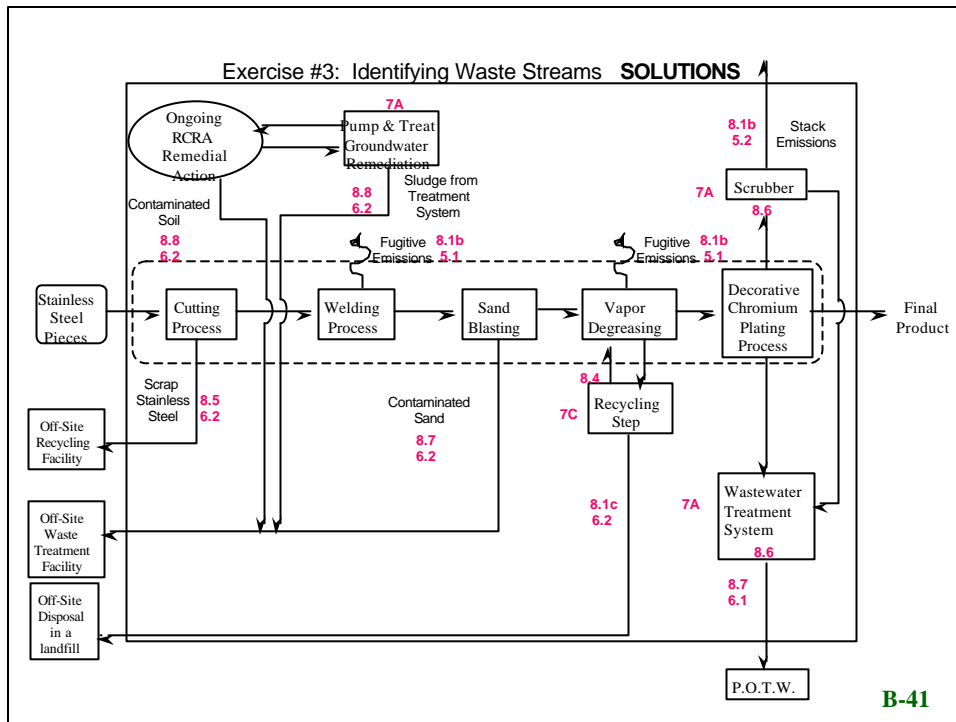
SOURCE REDUCTION AND OTHER WASTE MANAGEMENT ACTIVITIES

■ Important points regarding Sections 8.1 through 8.8

- Sum of the quantities in Sections 8.1 through 8.7 equals the total quantity of the Section 313 chemical “entering any waste stream (or otherwise released into the environment) prior to recycling, treatment, or disposal.” (PPA Section 6607(b)(1))
- Quantities reported in Sections 8.1 through 8.7 are exclusive of each other
- Sum of Sections 8.1 through 8.7 is mutually exclusive of the quantity in Section 8.8

B-39





PRODUCTION RATIO OR ACTIVITY INDEX

■ Section 8.9: Production ratio or activity index

- A ratio of production or activity involving the Section 313 chemical in the reporting year to production or activity in the previous year
- Allows quantities of the Section 313 chemical reported in Sections 8.1 through 8.7 in the current year to be compared to quantities reported in the prior year

Examples:

Oven manufacturing

40,000 ovens assembled (Current RY) = 1.14
35,000 ovens assembled (Prior RY)

Tank washouts

50 Washouts (Current RY) = 0.83
60 Washouts (Prior RY)

- Possible data sources: Production reports, Maintenance records for otherwise used chemicals, Waste minimization section of the RCRA hazardous waste report, State/corporate pollution prevention reports

SOURCE REDUCTION ACTIVITIES

■ Section 8.10

- Source reduction practices used with respect to the Section 313 chemical at the facility and the methods used to identify those activities
- This section includes only those source reduction activities implemented during the reporting year
 - » Only include activities that reduce or eliminate quantities reported in Sections 8.1 through 8.7
- Possible data sources
 - » Standard operating procedures
 - » Process changes or equipment changes (e.g., replacements, adjustments)
 - » Raw material changes
 - » Work orders for process changes
 - » Product redesign specifications
 - » Audit reports and follow-up actions
 - » Waste minimization section of the RCRA hazardous waste report
 - » State/corporate pollution prevention reports

B-43

OPTIONAL INFORMATION

■ Section 8.11

- Facility should indicate whether additional optional information on source reduction, recycling, or pollution control activities is included with the report
- A one-page summary is encouraged
- Facility can provide information on previous years' activities

B-44

POLLUTION PREVENTION INFORMATION

■ **OPPT Pollution Prevention (P2)**

- <http://www.epa.gov/opptintr/p2home/index.htm>

■ **Enviro\$en\$e Information Network**

- <http://es.epa.gov/index.html>

■ **Pollution Prevention Information Clearinghouse (PPIC)**

- (202) 566-0799
- <http://www.epa.gov/oppt/library/ppicindex.htm>

B-45

FORM A CERTIFICATION STATEMENT

FORM A CERTIFICATION STATEMENT

- If reporting is required, a Form A Certification Statement (Form A) may be submitted instead of a Form R only if the criteria are met:
 - Do not exceed 1,000,000 pounds manufactured, processed, or otherwise used; and
 - Do not exceed 500 pounds for the total annual reportable amount for a Section 313 chemical. Equivalent to the sum of the quantities calculated for Sections 8.1 - 8.7 of the Form R
- The Form A does not include release or other waste management reporting information (Sections 5,6,7,8 of Form R).
- Form A cannot be used for PBT chemicals
- A facility can submit a combination of Form Rs and Form As. Some chemicals may meet Form A criteria, others may not.
- If no threshold is exceeded for a chemical, no TRI report is required (neither a Form R or a Form A).

B-47

POP QUIZ

- You manufacture 100,000 pounds of a non-PBT Section 313 chemical. You sell 99,950 pounds as a product. You emit 25 pounds out a stack, and send 25 pounds off-site for disposal. Do you meet the criteria for submitting a Form A?
- You use 50,000 pounds of nitric acid as a cleaner. The entire amount is neutralized in your on-site wastewater treatment operation and there are no air or water releases. Do you meet the criteria for submitting a Form A?

B-48

FORM A CERTIFICATION STATEMENT

■ Recordkeeping

- All documentation to support the determination, including:
 - » Detailed records
 - » Well-labeled calculations and assumptions
- All records used to determine eligibility to file the Form A must be kept for a period of 3 years from the date of the submission of the certification statement (§372.10(d))

B-49

OVERVIEW: FORM R VS. FORM A

■ Form R

- Standard reporting method
- For all Section 313 chemicals
- Report releases, other waste management, and source reduction activities
- Recordkeeping requirements

■ Form A

- Alternate certification statement
- Not allowed for PBT chemicals
- Use for total reportable amounts not exceeding 500 pounds
- Recordkeeping requirements
- Thresholds cannot exceed 1,000,000 lbs.

B-50

Benefits of Submitting TRI Data Via TRI-ME and CDX



B-51



Benefits of Submitting via TRI-ME and CDX

- **Significantly reduces data errors by using TRI-ME and eliminating manual data capture**
- **Electronic Signature allows for *Paperless Filing***
- **Facilities receive instant email confirmation receipt**

B-52



Benefits of Submitting via TRI-ME and CDX

- **CDX submissions are processed automatically, unlike disk and paper submissions, which leads to faster Facility Data Profile (FDP) access. Reduced data collection costs for EPA, States, and Regulated Community**
- **Addresses Government Paperwork Elimination Act Mandates**

B-53



TRI Error Rates

■ **TRI-ME Submission by Media Error Rates:**

- Via CDX - 0.6%
- Via Disk - 1.2 %
- Via Paper - 12.3%

■ **Handwritten Submission Error Rates:**

- Hard Copy - 8.2%

B-54

Section 313 Reporting Exemptions

SECTION 313 EXEMPTIONS

- Designed to reduce the burden of reporting associated with small or ancillary chemical uses
- If an exemption applies, then the amount of a Section 313 chemical subject to the exemption does not have to be included in:
 - Threshold determinations (the use quantity that determines if reporting is required)
 - Release and other waste management reporting (quantities reported on the Form R)
 - Supplier notification
- Recognize that exemptions only apply in certain limited circumstances, be sure to fully understand the criteria before using an exemption

SECTION 313 EXEMPTIONS

■ Types of exemptions (§372.38)

- *De minimis*
- Articles
- Laboratory activities
- Otherwise use exemptions
 - » Motor vehicle maintenance
 - » Routine janitorial or facility grounds maintenance
 - » Structural components
 - » Personal use
 - » Intake water and air
- Mining (coal extraction activities and metal mining overburden)

C-3

DE MINIMIS EXEMPTION

- The quantity of a non-PBT Section 313 chemical in a mixture or other trade name product is eligible for the exemption if the chemical is:
 - Any non-PBT Section 313 chemical present at a concentration of less than 1% by weight (§372.38(a))
 - or
 - An OSHA-defined non-PBT carcinogen present at a concentration of less than 0.1% by weight
- The TRI *de minimis* level appears next to each chemical on the chemical list in Appendix II of the TRI Reporting Forms and Instructions (1.0, 0.1 or * for PBT chemicals where *de minimis* is not allowed)
- The *de minimis* is based on the concentration of the TRI chemical in a mixture. The quantity of the mixture used does not determine if the *de minimis* exemption can be taken.

C-4

DE MINIMIS EXEMPTION: How It Works

- *De minimis* exemption applies to non-PBT chemicals:
 - In mixtures or other trade name products, not wastes
 - That are processed, otherwise used, coincidentally manufactured as impurities that remain in products, or imported in mixtures or other trade name products, or in non-threshold activities
- *De minimis* exemption does not apply to
 - PBT chemicals (except for supplier notification)
 - Manufacturing chemicals, except as listed above
 - Wastes received from off-site

C-5

DE MINIMIS EXEMPTION: What if the chemical is contained in more than one mixture?

- Look at each mixture separately, *de minimis* may apply to some, not to others
- *De minimis* concentration for toluene is 1.0% (not an OSHA carcinogen)

Cleaning
Mixture
0.5% Toluene
(exempt)

Raw Material
Mixture
90% Toluene
(not exempt)

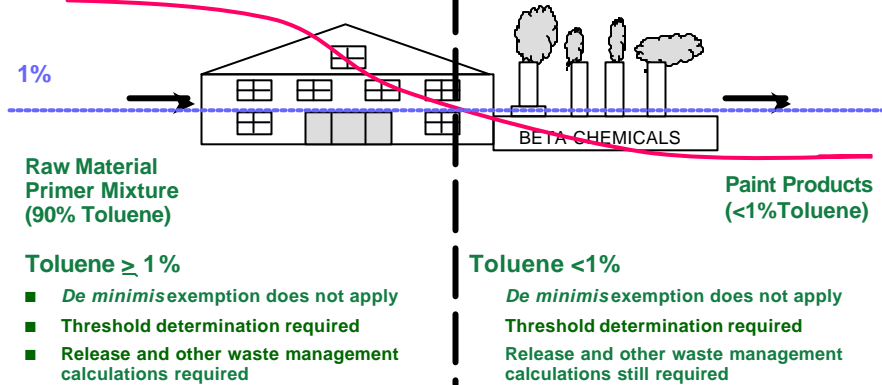


- Toluene in cleaning mixture is below *de minimis* concentration and is eligible for the exemption

C-6

DE MINIMIS EXEMPTION: What if the concentration in the mixture changes?

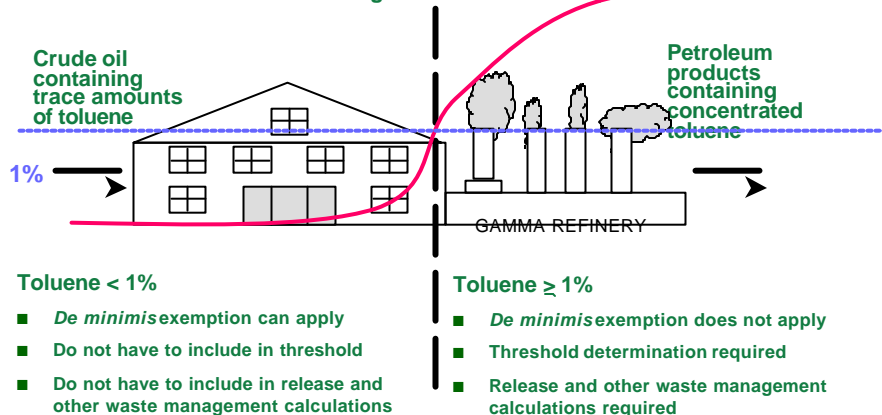
- Processing a non-PBT Section 313 chemical in a mixture to below the *de minimis* concentration does not exempt the chemical from threshold determinations and release and other waste management calculations



C-7

DE MINIMIS EXEMPTION: What if the concentration in the mixture changes?

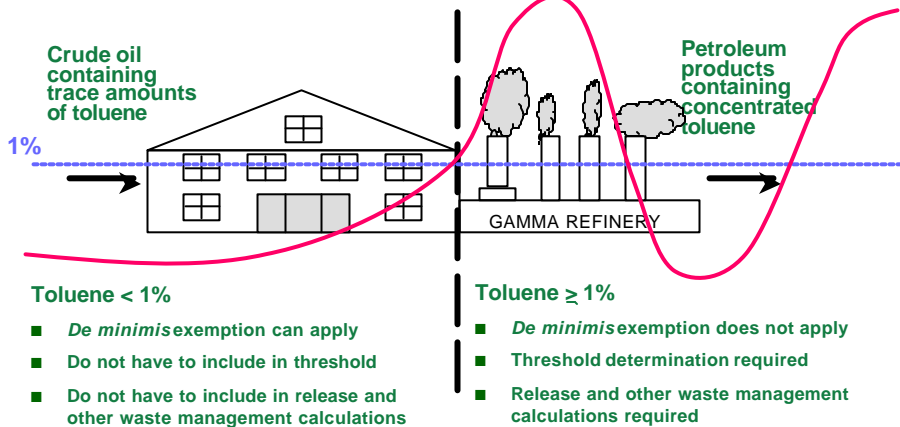
- Processing a non-PBT Section 313 chemical in a mixture to above the *de minimis* concentration triggers threshold determinations and release and other waste management calculation requirements



C-8

DE MINIMIS EXEMPTION: What if the concentration in the mixture changes?

- Processing a non-PBT Section 313 chemical in a mixture to above the *de minimis* concentration triggers threshold determinations and release and other waste management calculation requirements



C-9

ARTICLES EXEMPTION

- “Article” is defined (§372.3) as an item that is already manufactured and:
 - Is formed into a specific shape or design during manufacture; and
 - Has end-use functions dependent in whole or in part on its shape or design during end-use; and
 - Does not release a Section 313 chemical under normal processing or otherwise use at a facility
- The articles exemption does not apply to the manufacture of articles

C-10

ARTICLES EXEMPTION: How It Works

- Releases of a Section 313 chemical from an article may negate the exemption. To maintain the article status, total releases from all like items must be:
 - In a recognizable form; or
 - Recycled, directly reused; or
 - 0.5 pound or less (may be rounded down to zero)
- If more than 0.5 pound of a Section 313 chemical is released from all like items in a non-recognizable form and is not recycled or directly reused, none of the items meet the articles exemption
- The item must maintain its thickness or diameter to be exempt as an article

C-11

ARTICLES EXEMPTION: Examples

- Wire is cut to specified lengths. Wastes include off-spec cuts and dust
 - Generation of off-spec cuts that are recognizable as articles will not, by itself, negate the article status
 - Dust and off-spec cuts not recognizable as articles, with greater than 0.5 pound of ANY Section 313 chemical released, and not recycled or directly reused, negate the article status
- Fluorescent light bulbs are installed containing mercury. The used bulbs are crushed in an enclosed container for recycling
 - Crushing bulbs for disposal is not considered release during use; exemption is not negated

C-12

LABORATORY ACTIVITIES EXEMPTION

- Section 313 chemicals manufactured, processed, or otherwise used in certain laboratory activities, performed under the supervision of a technically qualified individual, may be eligible for the exemption (§372.38(d))
- Activity must occur in a laboratory to be exempt
- Laboratories, themselves, are not exempt

C-13

LABORATORY ACTIVITIES EXEMPTION: How It Works

- Section 313 chemicals manufactured, processed, or otherwise used in these laboratory activities are eligible for the exemption
 - Sampling and analysis
 - Quality assurance
 - Quality control
- Section 313 chemicals manufactured, processed, or otherwise used in these laboratory activities are NOT exempt
 - Any activities conducted outside laboratories
 - Specialty chemical production
 - Pilot-scale plant operations
 - Support services
 - Photo processing
 - Equipment maintenance/cleaning

C-14

MOTOR VEHICLES EXEMPTION

- Section 313 chemicals otherwise used to maintain motor vehicles operated by the facility are eligible for the exemption (§372.38(c)(4))
- Examples of motor vehicles eligible for the exemption include cars, trucks, airplanes, and forklifts
- Examples of exempt motor vehicle maintenance:
 - Body repairs
 - Parts washing and plating
 - Fueling and adding other fluids (e.g., ethylene glycol)

Note: fuel added to non-facility vehicles is considered processed and is not exempt

C-15

ROUTINE JANITORIAL OR FACILITY GROUNDS MAINTENANCE EXEMPTION

- Section 313 chemicals contained in products otherwise used for non-process related routine janitorial or facility grounds maintenance are eligible for the exemption (§372.38(c)(2))
 - Phenol in bathroom disinfectants
 - Pesticides in lawn care products
- Section 313 chemicals otherwise used in process-related activities are not exempt
 - Facility equipment maintenance
 - Cleaning or maintenance activities that are integral to the production process of the facility

C-16

STRUCTURAL COMPONENT EXEMPTION

- The otherwise use of Section 313 chemicals that are part of structural components of a facility are eligible for the exemption provided the structure is not process related (§372.38(c)(1))
 - Copper in pipe used in construction of employees' bathroom facilities
 - Metals, pigments, and solvents in paint applied to facility structure

C-17

OTHER EPCRA SECTION 313 EXEMPTIONS

- Section 313 chemicals contained in non-process related items for employee personal use (§372.38(c)(3))
 - HCFC-22 in air conditioners used solely for employee comfort
 - Chlorine used to treat on-site potable water
 - Phenol in a facility medical dispensary
- Section 313 chemicals found in intake water (e.g., process water and non-contact cooling water) and air (e.g., used as compressed air) (§372.38(c)(5))
 - Water must be from a natural source (e.g., river, lake) OR public water supply.

C-18

SIC CODE-SPECIFIC EXEMPTIONS

- **SIC Code 12: Coal mining extraction activities are exempt from threshold determinations and release reporting (§372.38(g))**
 - Coal extraction: the physical removal or exposure of ore, coal, minerals, waste rock, or overburden prior to beneficiation, and encompasses all extraction-related activities prior to beneficiation (§372.3)
- **SIC Code 10: Chemicals in metal mining overburden that are processed or otherwise used are specifically exempt from TRI reporting (§372.38(h))**
 - Overburden: unconsolidated material that overlies a deposit of useful materials or ores (§372.3)

Chemicals with Special TRI Reporting Considerations

1. Reporting Requirements for Persistent, Bioaccumulative, And Toxic (PBT) Chemicals:

THE PBT RULE

- **PBT chemical rule published in the *Federal Register* (October 29, 1999; 64 FR 58666)**
 - applied beginning RY 2000
 - added new chemicals to the TRI list
 - identified a subset of chemicals (PBT chemicals) with lower thresholds and special reporting requirements (§372.28)
- **A separate rulemaking designated lead and lead compounds as PBT chemicals beginning RY 2001**
- **EPA TRI chemical-specific guidance documents are available for all PBT chemicals at www.epa.gov/tri**

D-3

PBT CHEMICALS AND THRESHOLDS

Manufacture, process, and otherwise use thresholds:

- **100 lbs./yr -**

Aldrin	PACs
Methoxychlor	TBBPA
Pendimethalin	Trifluralin
Lead	Lead Compounds
- **10 lbs./yr -**

Chlordane	Benzo(g,h,i)perylene
Heptachlor	Hexachlorobenzene
Mercury	Mercury compounds
Toxaphene	Octachlorostyrene
Isodrin	Pentachlorobenzene
PCBs	
- **0.1 g/yr -**

Dioxin and dioxin-like compounds

D-4

REPORTING CHANGES FOR PBTS

- EPA has prohibited use of Form A certification statements
- EPA has prohibited use of range codes for reporting releases and other waste management quantities (Part II, Sections 5, 6 of Form R)
- The *de minimis* exemption has been eliminated for PBT chemicals except for purposes of supplier notification
 - Users of mixtures must use best readily available information to determine the PBT chemicals present and their concentrations
- No other Section 313 regulatory exemptions were modified or restricted by the PBT chemical rule
- Reporting for PBTS lowered down to the tenth of a pound (versus whole pounds for non-PBTs)
 - PBTS: reported quantities ≤ 0.05 lbs can be rounded down to 0 (except dioxins, ≤ 50 micrograms can be rounded to 0)

D-5

PACs AND BENZO(G,H,I)PERYLENE

- PBT activity threshold
 - PAC category threshold: 100 pounds
 - Benzo(g,h,i)perylene threshold: 10 pounds
- Sources of PACs and Benzo(g,h,i)perylene
 - Coal
 - Fuel oil and other petroleum products
 - Asphalt
 - Creosote wood treatment
- Activity Level to Exceed Thresholds (from EPA TRI PACs guidance)

Fuel Type	Concentration	Reference	Quantity Needed to Meet Threshold (gallons) ^a
No. 6 Fuel Oil (Bunker C)	2451 ppm	7	5.144×10^3
No. 2 Fuel Oil	10.0 ppm	8	1.41×10^3
Crude Oil	(a)		
Gasoline	17 ppm	9	1.06×10^3
Paving Asphalt ^b	178 ppm	10	5.18×10^3

D-6

DIOXIN AND DIOXIN-LIKE COMPOUNDS

- PBT activity threshold: 0.1 gram
- When reporting on dioxin and dioxin-like compounds category, *TRI-ME* will automatically recognize units of measure as grams
- Dioxin and dioxin-like compounds (DLCs) category qualifier reads:

“Manufacturing; and the processing or otherwise use of dioxin and dioxin-like compounds if the dioxin and dioxin-like compounds are present as contaminants in a chemical and if they were created during the manufacturing of that chemical.”
- Some literature contains information about dioxin and DLCs emissions in terms of grams TEQ (toxicity equivalency). Do not use these for threshold determination or release reporting, use actual weights.

D-7

DIOXIN AND DIOXIN-LIKE COMPOUNDS

- Form R Part II, Section 1.4 requires reporting of the distribution of each member of the dioxin and DLCs category as percentages among the 17 category members. This is only required if such information is available from the facility's data used to report
 - List is in EPA's *TRI Reporting Forms and Instructions* document
 - Do not check NA unless you are reporting for dioxin and DLCs
 - This distribution is provided for EPA-published emission factors.
 - » “Guidance for Reporting Toxic Chemicals within the Dioxin and Dioxin-like Compounds Category”

1.4 Distribution of Each Member of the Dioxin and Dioxin-like Compounds Category.

(If there are any numbers in boxes 1-17, then every field must be filled in with either 0 or some number between 0.01 and 100. Distribution should be reported in percentages and the total should equal 100%. If you do not have speciation data available, indicate NA.)

NA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
----	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----

D-8

MERCURY AND MERCURY COMPOUNDS

- **PBT activity threshold:**
 - 10 pounds for mercury
 - 10 pounds for mercury compounds
- **Mercury compounds are present in crude oil, fuel oils, and coal**
 - Combustion of fuels is expected to be the main source of mercury reporting
- **Mercury may be present in mined ores**
- **Mercury concentrations in coal and other materials:**
 - Use the best readily available data. (e.g., mercury ICR data for your facility if available)
- **Activity Level to Exceed Threshold (from EPA TRI Mercury guidance)**

Raw Material	Concentration Mercury, ppm	Reference ¹	Quantity Needed to Meet Threshold (pounds for ores, gallons for oil) ²
Copper ores	0.5	11	2.00×10^7
Gold ores	9	11	1.11×10^6
No. 2 fuel oil ³	0.001	12	1.41×10^6
No. 6 fuel oil ³	0.00067	12	1.80×10^6

D-9

LEAD AND LEAD COMPOUNDS

- **PBT activity threshold:**
 - 100 pounds for lead (not contained in stainless steel, brass, or bronze)
 - 100 pounds for lead compounds
 - **Non-PBT activity threshold**
 - Non-PBT thresholds apply to lead contained in stainless steel, brass, or bronze*
 - » 25,000 lbs for manufacture or process
 - » 10,000 lbs for otherwise use
- *If elemental lead is removed from the qualified alloy, such as vaporization during melting of an alloy, the 100 lb threshold applies

D-10

LEAD AND LEAD COMPOUNDS

- Raw materials processed by a variety of facilities may contain metallic lead or lead compounds:
 - Metal ores
 - Coal
 - Wood
 - Oil & Oil products: heating oils, gasolines
- Lead used in solder and other alloys is in the elemental NOT the compound form (i.e., this is lead, not a lead compound)
- Lead-acid batteries will typically meet the articles exemption

D-11

Typical Concentration of Lead in Raw Materials and Quantity Required to Meet 100 lb. Threshold*

Raw Material	Lead Concentration (ppmw)	Quantity Needed to Meet the 100 lb Lead Threshold
Bituminous coal	3 to 111	3.33×10^7 to 9.01×10^5 lbs
Subbituminous coal	2.07 to 31	4.83×10^7 to 3.23×10^6 lbs
Lignite coal	3.73 to 9.8	2.68×10^7 to 1.02×10^7 lbs
Wood	20	5.00×10^6 lbs

**Emergency Planning and Community Right-to-Know Act-Section 313: Guidance for Reporting Releases and Other Waste Management Activities of Toxic Chemicals: Lead and Lead Compounds*

D-12

PESTICIDES AND OTHER PBT CHEMICALS

■ Pesticides:

- Most banned for use/manufacture.
- TSDFs handling old pesticide waste likeliest source of reporting.
- Use of pesticides for decorative grounds maintenance is exempt (agricultural use NOT exempt)

■ Polychlorinated biphenyls (PCBs)

- Disposal of old transformers is NOT a threshold activity

■ Tetrabromobisphenol A (TBBPA)

- Used in computer-related plastics

■ Hexachlorobenzene (HCB)

■ Pentachlorobenzene

■ Octachlorostyrene (OCS)

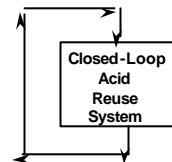
D-13

2. Non-PBT Chemicals with Special TRI Reporting Considerations

ACID AEROSOLS

- Hydrochloric and Sulfuric acids have a chemical qualifier...they are reportable only if in the aerosol form.
 - These aerosols are common combustion products of coal and other fuels combustion.
- Threshold determination for closed-loop acid reuse systems (sulfuric and hydrochloric acid only).
 - Acid aerosol manufactured and otherwise used
 - Simplified method of estimating quantity for threshold determination:

Total Amount of Acid in Reuse System + Total Virgin Acid Added in RY
= Amount Acid Aerosols Manufactured/Otherwise Used



- See EPA's *Guidance for Reporting Sulfuric Acid* and *Guidance for Reporting Hydrochloric Acid* for specific calculations

D-15

AMMONIA GUIDANCE

- Ammonia
 - Requires threshold determination and release and other waste management quantity calculations for aqueous ammonia from any source (i.e., anhydrous ammonia placed in water or water dissociable ammonium salts) be based on 10% of the total ammonia present in aqueous solutions
 - Anhydrous ammonia - include 100% for thresholds and releases
 - » Including air releases from aqueous ammonia
 - Effective RY 1994

D-16

NITRATE COMPOUNDS GUIDANCE

■ Water dissociable nitrate compounds category

- For threshold determinations, use the weight of the entire nitrate compound
- Calculate only the weight of the nitrate ion portion when calculating releases and other waste management quantities
- Nitrate compounds are produced most commonly when nitric acid is neutralized
- Includes compounds like sodium nitrate, silver nitrate, and ammonium nitrate

D-17

TRI REPORTING FROM COMBUSTION OF FUELS

- TRI chemicals already present in the fuel before the fuel is burned are counted towards the *otherwise use* threshold.
 - If you do not have analytical data for the fuel, use the *default concentration* listed in the EPA TRI Guidance on Electricity Generating Facilities or the EPA TRI Guidance for that chemical to make the calculation.
- TRI chemicals created as products of combustion from burning the fuel are counted towards the *manufacturing* threshold.
 - Examples include acid aerosols and metal compounds. If you do not have monitoring data, use the *emission factor* for this chemical from combustion of this fuel found in the AP-42 or in the guidance documents listed above to make the calculation. *Check the pollution control efficiency.*
 - This quantity will also be reported in Part II, Section 5.2 of the Form R (stack air releases).

D-18

METALS AND METAL CATEGORY COMPOUNDS GUIDANCE

- **Elemental metals and metal compound categories are separately listed chemicals under Section 313**
 - Separate activity threshold determinations
 - Report for each listing (e.g., nickel or nickel compound) only if the threshold for each listing is exceeded
 - If threshold exceeded for both the elemental metal and metal category compound (e.g., nickel and nickel compounds), you have the option to report separately or file one combined report
 - » If filing a combined report, file as metal category compound

D-19

METAL COMPOUNDS

- **For threshold calculations, such as manufacture of metal compounds through combustion of fuels, use the total weight of the compound, not the parent metal**
- **Releases and other waste management estimates (what you report on the Form R): these quantities are based on the parent metal weight only!**

D-20

METAL COMPOUNDS - Example

- **THRESHOLD**, use the weight of the entire compound:
- Let's say you have manufactured 200 pounds of lead oxide during combustion of coal. Lead oxide (PbO) contains one atom* of lead and one atom of oxygen. For your manufacturing threshold, you will count the entire 200 pounds of lead oxide.

* Every atom is assigned a number based on its weight, called the atomic weight. You can find this information on the chemical periodic table (readily available on the internet).

D-21

METAL COMPOUNDS – Example Continued

- **RELEASE & WASTE MGMT REPORTING ON FORM R:**
- For your release & wm reporting, you would only count the percentage of the 200 pounds that comes from the lead, and not count the percentage of the weight that comes from the oxygen.
- The atomic weight of lead is approximately 207, and the atomic weight of oxygen is approximately 16.
 - This means that for lead oxide, about 93% of the weight of this compound comes from lead ($207/(207 + 16) = 0.93$), and about 7% of the weight of this compound comes from oxygen ($16/(207 + 16) = 0.07$).
- So if you are reporting a stack release based on the 200 pounds of lead oxide created during combustion, you would not report 200 pounds. You would instead report 186 pounds, which equals 93% of 200 pounds, and which is the weight that comes just from the lead.

D-22

METAL CYANIDE COMPOUNDS GUIDANCE

- A metal cyanide compound such as cadmium cyanide will require separate reporting under both the cadmium and cyanide categories*
 - For reporting the metal, use the entire weight of the compound for threshold determinations, and only the weight of the metal portion of the compound for release and other waste management reporting.
 - For reporting cyanide, use the weight of the entire compound for threshold determinations, and also the weight of the entire compound for release and other waste management reporting.
- * *The qualifier for cyanide compounds states:
 X^+CN^- ; where $X=H^+$ or any other group where a formal dissociation may occur. For example, KCN or $Ca(CN)_2$*

TRI PROGRAM INFORMATION

PROGRAM UPDATES FOR RY 2005

- Key program changes are listed on the second sheet of the Reporting Forms & Instructions each year.
- TRI Burden Reduction Rule Effective for RY2005:
 - Phase I - Modifications to the reporting forms to streamline reporting;
- Proposed Burden Reduction Rule:
 - Phase II – Would enable facilities to use Form A for reporting certain PBT chemicals; and would expand the use of Form A for non-PBT chemicals. Not effective for RY2005.
 - Phase III – Notification to Congress of intent to modify reporting frequency.
 - More information on the TRI Burden Reduction Rules can be obtained from www.epa.gov/tri.

TRI WEBSITE: www.epa.gov/tri

- **Program Updates**
- **Stakeholder Dialogue**
- **Guidance Documents**
 - Q & A
 - Q & A Addendum
 - Industry Specific
 - Chemical Specific
- **Reporting Forms & Instructions**
- **Software**
- **Regional and State TRI Contacts**
- **Facility Data Profile instructions and information**
- **TRI-ME and CDX Support Contact Info**

E-3

Revising TRI Data – Facility Data Profiles

- It is extremely important to review your Facility Data Profile (FDP). The FDP's purpose is to provide you an opportunity to review what you have submitted and it allows EPA to highlight errors and possible data quality issues with your submission. *To receive a real-time notification when your FDP has been made available on the FDP website, you MUST provide a Technical Contact email address on your forms.*
- Facilities will receive their FDP much sooner if they submit via CDX rather than diskette.

E-4

Revising TRI Data – Preferred Method

- The preferred method to submitting revised TRI forms is by the use of *TRI-ME* Software and submission through the internet via EPA's CDX.
 - If you have questions regarding *TRI-ME*, please call the *TRI-ME* Hotline @ 1 877-470-4830.
 - If you have questions regarding CDX usage, please call the CDX Hotline @ 1 888-890-1995.
- For more information regarding revisions:
 - Page 3 of the Toxic Chemical Release Inventory Reporting Forms and Instructions.
 - <http://www.epa.gov/tri/report/index.htm#revise>

E-5

FORM R SUBMISSIONS/REVISIONS

Reminder:

- **Form R submitted to replace previously filed Form A Certification Statement**
 - Considered to be a late submission of a Form R and a request for a withdrawal of the previously filed Form A Certification Statement
 - Do not check the revision box!
- **For a change in the chemical reported (including a metal to a metal compound) you must withdraw the original submission and re-submit for the new chemical. This is not a revision.**

E-6

EPA AUDIT POLICY

- **Audit Policy enhances environmental protection through incentives for companies to self-police, disclose and correct violations**
- **Companies that satisfy the Policy's criteria are eligible for up to 100% reductions in otherwise applicable penalties**
- **Since implemented in 1995, over 1,500 companies have self-disclosed violations at over 6,065 facilities under the policy**

E-7

EPA AUDIT POLICY

- **Conditions to qualify (nine criteria):**
 - Systematic Discovery of the Violation through Environmental Audit or Due Diligence
 - Voluntary Discovery
 - Prompt Disclosure
 - Discovery and Disclosure Independent of Government or Third Party Plaintiff
 - Correction and Remediation
 - Prevent Recurrence
 - No Repeat Violations
 - Other Violations Excluded
 - Cooperation
- **For more information, including a copy of the Audit Policy (revised in May 2000), visit:**
<http://www.epa.gov/compliance/incentives/auditing/auditpolicy.html>

E-8

EPCRA SECTION 313 ENFORCEMENT

- Companies violating any statutory or regulatory requirement are subject to penalties of up to \$32,500 per day per violation
- Companies subject to citizen suits and could also be liable for attorney fees and litigation costs
- Government's penalty is determined by applying the Enforcement Response Policy (ERP) to each violation

E-9

EPCRA SECTION 313 ENFORCEMENT

- It is important to file your TRI reporting form on time. Last year, EPA enforcement initiated enforcement actions against hundreds of facilities that failed to report on time. These facilities could face fines up to \$32,500 per violation per day. These enforcement actions will be highlighted in an Enforcement Alert Bulletin made available on the Internet at:
<http://www.epa.gov/Compliance/resources/newsletters/civil/enfalert/index.html>

E-10

DOCUMENT DISTRIBUTION CENTERS

U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Attn: TRI Documents
MC: 2844T
Washington, DC 20460

(202) 564-9554

Email: TRIDOCs@epa.gov

E-11

***TRI-ME* REPORTING SOFTWARE**

- Guides facilities in completing the Form R and Form A Certification Statement by explaining each element of the form through a questionnaire format.
- Guides the user through the process of determining whether the facility must report based on the facility's primary SIC code and the number of employees hours. Helps determine the primary SIC code.
- Guides facilities through process of determining whether they exceed the chemical activity thresholds.
- Allows expert TRI users to bypass most of the *TRI-ME* guidance and directly enter the data into the forms.

E-12

TRIME REPORTING SOFTWARE

- Prevents facilities from making common errors while completing the Form R and Form A Certification Statement.
- Checks (validates) the forms to identify critical errors that must be corrected before submitting the forms to EPA. Also, suggests potential errors for user review.
- Assists users with their Section 8 calculations
- Access to the TRI Assistance Library.

E-13


TRIME REPORTING SOFTWARE

- Allows Internet paperless submission of forms
- Security – Your information is protected by username and password (and secret question/answer) that you create
- Provides burden reduction – saves time over conventional submission methods

E-14

TRI-ME AND CDX DEMONSTRATION

This will be a live demonstration

 EPA United States Environmental Protection Agency		FORM R Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986, also Known as Title III of the Superfund Amendments and Reauthorization Act		TRI Facility ID Number Toxic Chemical, Category or Generic Name 		
WHERE TO SEND COMPLETED FORMS: <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> 1. TRI Data Processing Center P. O. Box 1513 Lanham, MD 20703-1513 ATTN: TOXIC CHEMICAL RELEASE INVENTORY </div> <div style="width: 45%;"> 2. APPROPRIATE STATE OFFICE (See instructions in Appendix F) </div> </div>						
					Enter "X" here if this is a revision For EPA use only	
IMPORTANT: See instructions to determine when "Not Applicable (NA)" boxes should be checked.						
PART 1. FACILITY IDENTIFICATION INFORMATION						
SECTION 1. REPORTING YEAR _____						
SECTION 2. TRADE SECRET INFORMATION						
2.1	Are you claiming the toxic chemical identified on page 2 trade secret? <input type="checkbox"/> Yes (Answer question 2.2; Attach substantiation forms) <input type="checkbox"/> No (Do not answer 2.2; Go to Section 3)			2.2	Is this copy <input type="checkbox"/> Sanitized <input type="checkbox"/> Unsanitized (Answer only if "YES" in 2.1)	
SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.) I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.						
Name and official title of owner/operator or senior management official:			Signature:		Date Signed:	
SECTION 4. FACILITY IDENTIFICATION						
4.1		TRI Facility ID Number _____				
Facility or Establishment Name		Facility or Establishment Name or Mailing Address (If different from street address)				
Street		Mailing Address				
City/County/State/Zip Code		City/State/Zip Code		Country (Non-US)		
4.2		This report contains information for: (Important: Check a or b; check c or d if applicable) a. <input type="checkbox"/> An entire facility b. <input type="checkbox"/> Part of a facility c. <input type="checkbox"/> A Federal facility d. <input type="checkbox"/> GOCO				
4.3		Technical Contact Name		Telephone Number (include area code)		
		Email Address				
4.4		Public Contact Name		Telephone Number (include area code)		
4.5		SIC Code (s) (4 digits)				
		Primary	a.	b.	c.	d.
4.7		Dun & Bradstreet Number (s) (9 digits)		a.		
				b.		
SECTION 5. PARENT COMPANY INFORMATION						
5.1		Name of Parent Company	NA <input type="checkbox"/>			
5.2		Parent Company's Dun & Bradstreet Number	NA <input type="checkbox"/>			

FORM R**PART II. TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM**

TRI Facility ID Number

Toxic Chemical, Category or Generic Name

SECTION 1. TOXIC CHEMICAL IDENTITY

(Important: DO NOT complete this section if you completed Section 2 below.)

1.1 CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)**1.2** Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)**1.3** Generic Chemical Name (Important: Complete only if Part 1, Section 2.1 is checked "yes". Generic Name must be structurally descriptive.)**1.4 Distribution of Each Member of the Dioxin and Dioxin-like Compounds Category.**

(If there are any numbers in boxes 1-17, then every field must be filled in with either 0 or some number between 0.01 and 100. Distribution should be reported in percentages and the total should equal 100%. If you do not have speciation data available, indicate NA.)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
NA <input type="checkbox"/>																	

SECTION 2. MIXTURE COMPONENT IDENTITY

(Important: DO NOT complete this section if you completed Section 1 above.)

2.1 Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces and punctuation.)**SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY**

(Important: Check all that apply.)

3.1	Manufacture the toxic chemical:	3.2	Process the toxic chemical:	3.3	Otherwise use the toxic chemical:
a. <input type="checkbox"/> Produce	b. <input type="checkbox"/> Import	a. <input type="checkbox"/> As a reactant	b. <input type="checkbox"/> As a formulation component	a. <input type="checkbox"/> As a chemical processing aid	b. <input type="checkbox"/> As a manufacturing aid
If produce or import		c. <input type="checkbox"/> As an article component	d. <input type="checkbox"/> Repackaging	c. <input type="checkbox"/> Ancillary or other use	
c. <input type="checkbox"/> For on-site use/processing	d. <input type="checkbox"/> For sale/distribution	e. <input type="checkbox"/> As an impurity			
e. <input type="checkbox"/> As a byproduct	f. <input type="checkbox"/> As an impurity				

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR**4.1** (Enter two digit code from instruction package.)**SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE**

		A. Total Release (pounds/year*) (Enter a range code** or estimate)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	NA <input type="checkbox"/>		
5.2	Stack or point air emissions	NA <input type="checkbox"/>		
5.3	Discharges to receiving streams or water bodies (enter one name per box)			
Stream or Water Body Name				
5.3.1				
5.3.2				
5.3.3				

If additional pages of Part II, Section 5.3 are attached, indicate the total number of pages in this box and indicate the Part II, Section 5.3 page number in this box. (example: 1,2,3, etc.)

FORM R**PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)**

TRI Facility ID Number

Toxic Chemical, Category or Generic Name

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE (continued)

	NA	A. Total Release (pounds/year*) (enter range code ** or estimate)	B. Basis of Estimate (enter code)
5.4.1 Underground Injection onsite to Class I Wells	<input type="checkbox"/>		
5.4.2 Underground Injection onsite to Class II-V Wells	<input type="checkbox"/>		
5.5 Disposal to land onsite			
5.5.1A RCRA Subtitle C landfills	<input type="checkbox"/>		
5.5.1B Other landfills	<input type="checkbox"/>		
5.5.2 Land treatment/application farming	<input type="checkbox"/>		
5.5.3A RCRA Subtitle C surface impoundments	<input type="checkbox"/>		
5.5.3B Other surface impoundments	<input type="checkbox"/>		
5.5.4 Other disposal	<input type="checkbox"/>		

SECTION 6. TRANSFERS OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS**6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)****6.1.A Total Quantity Transferred to POTWs and Basis of Estimate**

6.1.A.1 Total Transfers (pounds/year*) (enter range code ** or estimate)	6.1.A.2 Basis of Estimate (enter code)

6.1.B _____	POTW Name				
POTW Address					
City		State		County	
Zip					
6.1.B _____	POTW Name				
POTW Address					
City		State		County	
Zip					

If additional pages of Part II, Section 6.1 are attached, indicate the total number of pages in this box and indicate the Part II, Section 6.1 page number in this box (example: 1,2,3, etc.)

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS

6.2. _____	Off-Site EPA Identification Number (RCRA ID No.)				
Off-Site Location Name					
Off-Site Address					
City		State		County	
Zip				Country (Non-US)	
Is location under control of reporting facility or parent company? <input type="checkbox"/> Yes <input type="checkbox"/> No					

FORM R**PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)**

TRI Facility ID Number

Toxic Chemical, Category or Generic Name

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS (CONTINUED)

A. Total Transfers (pounds/year*) (enter range code**or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1.	1.	1. M
2.	2.	2. M
3.	3.	3. M
4.	4.	4. M

6.2 Off-Site EPA Identification Number (RCRA ID No.)

Off-Site Location Name

Off-Site Address

City		State		County		Zip		Country (Non-US)	
------	--	-------	--	--------	--	-----	--	---------------------	--

Is location under control of reporting facility or parent company?

Yes ☐No ☐

A. Total Transfers (pounds/year*) (enter range code**or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1.	1.	1. M
2.	2.	2. M
3.	3.	3. M
4.	4.	4. M

SECTION 7A. ON-SITE WASTE TREATMENT METHODS AND EFFICIENCY
☐ Not Applicable (NA) - Check here if no on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.

a. General Waste Stream [enter code]	b. Waste Treatment Method(s) Sequence [enter 3- or 4- character code(s)]				d. Waste Treatment Efficiency [enter 2 character code]
7A.1a	7A.1b	1	2		7A.1d
	3	4	5		
	6	7	8		
7A.2a	7A.2b	1	2		7A.2d
	3	4	5		
	6	7	8		
7A.3a	7A.3b	1	2		7A.3d
	3	4	5		
	6	7	8		
7A.4a	7A.4b	1	2		7A.4d
	3	4	5		
	6	7	8		
7A.5a	7A.5b	1	2		7A.5d
	3	4	5		
	6	7	8		

 If additional pages of Part II, Section 6.2/7A are attached, indicate the total number of pages in this box
 and indicate the Part II, Section 6.2/7 page number in this box: (example: 1,2,3,etc.)

FORM R**PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)**

TRI Facility ID Number

Toxic Chemical, Category or Generic Name

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES
☐ Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.

Energy Recovery Methods [enter 3-character code(s)]

1

2

3

SECTION 7C. ON-SITE RECYCLING PROCESSES
☐ Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.

Recycling Methods [enter 3-character code(s)]

1

2

3

SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES

		Column A Prior Year (pounds/year*)	Column B Current Reporting Year (pounds/year*)	Column C Following Year (pounds/year*)	Column D Second Following Year (pounds/year*)
8.1					
8.1a	Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills				
8.1b	Total other on-site disposal or other releases				
8.1c	Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills				
8.1d	Total other off-site disposal or other releases				
8.2	Quantity used for energy recovery onsite				
8.3	Quantity used for energy recovery offsite				
8.4	Quantity recycled onsite				
8.5	Quantity recycled offsite				
8.6	Quantity treated onsite				
8.7	Quantity treated offsite				
8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)*				
8.9	Production ratio or activity index				
8.10	Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11.				
	Source Reduction Activities [enter code(s)]	Methods to Identify Activity (enter codes)			
8.10.1		a.	b.	c.	
8.10.2		a.	b.	c.	
8.10.3		a.	b.	c.	
8.10.4		a.	b.	c.	
8.11	If you wish to submit additional optional information on source reduction, recycling, or pollution control activities, check "Yes."				Yes <input type="checkbox"/>



United States
Environmental Protection Agency

TOXICS CHEMICAL RELEASE INVENTORY FORM A

WHERE TO SEND COMPLETED FORMS: 1. TRI Data Processing Center
P. O. Box 1513
Lanham, MD 20703-1513
ATTN: TOXIC CHEMICAL RELEASE INVENTORY

2. APPROPRIATE STATE OFFICE
(See instruction in Appendix F)

Enter "X" here if
this is a revision

For EPA use only

IMPORTANT: See instructions to determine when "Not Applicable (NA)" boxes should be checked.

PART 1. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR _____

SECTION 2. TRADE SECRET INFORMATION

2.1	Are you claiming the toxic chemical identified on page 2 trade secret?	2.2	Is this copy
	<input type="checkbox"/> Yes (Answer question 2.2; Attach substantiation forms) <input type="checkbox"/> No (Do not answer 2.2; Go to Section 3)		<input type="checkbox"/> Sanitized <input type="checkbox"/> Unsanitized
(Answer only if "YES" in 2.1)			

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that to the best of my knowledge and belief, for each toxic chemical listed in the statement, the annual reportable amount as defined in 40 CFR 372.27 (a), did not exceed 500 pounds for this reporting year and that the chemical was manufactured, processed, or otherwise used in an amount not exceeding 1 million pounds during this reporting year.

Name and official title of owner/operator or senior management official:

Signature:

Date Signed:

SECTION 4. FACILITY IDENTIFICATION

4.1	TRI Facility ID Number	
	Facility or Establishment Name	Facility or Establishment Name or Mailing Address (If different from street address)
	Street	Mailing Address
	City/County/State/Zip Code	City/State/Zip Code
		Country (Non-US)

4.2	This report contains information for: (Important: Check c or d if applicable)	c. <input type="checkbox"/> A Federal facility d. <input type="checkbox"/> GOCO
------------	---	---

4.3	Technical Contact Name	Telephone Number (include area code)
	Email Address	

4.4 Intentionally left blank

4.5	SIC Code (s) (4 digits)	Primary	a.	b.	c.	d.	e.	f.
4.7	Dun & Bradstreet Number (s) (9 digits)	a.	b.					

SECTION 5. PARENT COMPANY INFORMATION

5.1	Name of Parent Company	NA <input type="checkbox"/>	
5.2	Parent Company's Dun & Bradstreet Number	NA <input type="checkbox"/>	

EPA FORM A

PART II. CHEMICAL IDENTIFICATION

TRIFID: _____

Do not use this form for reporting PBT chemicals including Dioxin and Dioxin-like Compounds*

SECTION 1. TOXIC CHEMICAL IDENTITY

Report ___ of ___

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete only if Part 1, Section 2.1 is checked "yes". Generic Name must be structurally descriptive.)

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)
------------	--

SECTION 1. TOXIC CHEMICAL IDENTITY

Report ___ of ___

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete only if Part 1, Section 2.1 is checked "yes". Generic Name must be structurally descriptive.)

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)
------------	--

SECTION 1. TOXIC CHEMICAL IDENTITY

Report ___ of ___

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete only if Part 1, Section 2.1 is checked "yes". Generic Name must be structurally descriptive.)

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)
------------	--

SECTION 1. TOXIC CHEMICAL IDENTITY

Report ___ of ___

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete only if Part 1, Section 2.1 is checked "yes". Generic Name must be structurally descriptive.)

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)
------------	--

*See the TRI Reporting Forms and Instructions Manual for the list of PBT Chemicals (including Dioxin and Dioxin-like Compounds)

EPA Form 9350 -1 (Rev. 08/2005) - Previous editions are obsolete.

(Make additional copies of this page, if needed)

EXERCISE #2: DETERMINING THRESHOLDS MANUFACTURING CASE STUDY

Using the information in the exercise, complete the following tasks to determine which chemicals will require you to prepare a TRI report.

1. Identify each listed Section 313 chemical or chemical category manufactured, processed, and/or otherwise used at the facility that you should evaluate for threshold determinations.
2. Use the attached threshold determination worksheets to determine which toxic chemicals meet or exceed an applicable threshold for manufacture, process, or otherwise use.
3. Prepare Part II, Sections 1, 2 and 3 of Form R for each Section 313 chemical that exceeds an applicable threshold.

Make any necessary assumptions and be prepared to identify the assumptions you have made and the approach you used in completing this exercise.

Facility Description and Chemical Usage

Darcy Corp. operates adjacent plants at a site in central Ohio: Plant 1 manufactures industrial refrigeration units and Plant 2 manufactures molded plastic components for a variety of consumer product applications. Plant 1 employs a staff of 1,600 employees. Plant 2 employs a staff of 800 full-time employees. The two plants operate independently.

Plant 1 uses Hi-Copper Brass Tubing (90.0 percent copper, 9.2 percent zinc) in the manufacture of the air conditioners' components. The tubing is cut, bent into the appropriate shapes, and welded into the air conditioning units. Plant 1 estimates that these activities generate over 0.5 pounds of copper releases to air and water. The purchasing department indicates that Plant 1 received 100,000 pounds of Hi-Copper Brass Tubing in the reporting year.

One of the refrigerants used by Plant 1 in its products is HCFC-22 (>98.0 percent pure). The A100 series of refrigeration units use HCFC-22. In the reporting year, the facility produced 240 of these units, each of which contains 100 pounds of HCFC-22. Information provided by the HCFC-22 supplier indicates that they delivered 20,000 pounds to the site's HCFC-22 storage tank in the reporting year. Inventory records for the HCFC-22 storage tank indicated that the tank contained 15,000 pounds at the beginning of the reporting year and 9,000 pounds at the end of the reporting year.

Plant 1 paints certain refrigeration unit components using a paint that contains 10-weight percent methyl ethyl ketone (MEK), a solvent. Paint booth logs indicate Plant 1 used 110,000 pounds of this paint in these painting operations.

Plant 2 uses a resin in an injection molding process to make various plastic components. Inventory records indicate that the facility used 300,000 pounds of the resin in the reporting year.

The resin contains 4-weight percent of barium hydroxide and 1.5 percent elemental zinc. Information obtained from the vendor indicates that during the curing of the resin, 1 pound of anhydrous ammonia is generated for each 100 pounds of resin used.

Inventory records indicate that 10,000 pounds of an adhesive that contains 12-weight percent MEK was used as a solvent in the adhesive application operations in the reporting year.

In the reporting year, a contractor painted the exterior and interior of all buildings on site. The contractor reported that their paint usage in the reporting year was 20,000 pounds, containing 5-weight percent MEK.

In the reporting year, remediation of soil contaminated with 1,1,1-trichloroethane and 2-butanone (MEK) was conducted with a soil vapor extraction (SVE) system. After being processed through an activated carbon adsorption unit that is 99 percent efficient in capturing the organic emissions, the exhaust from the SVE system is emitted to the air through a stack. The SVE system is estimated to extract from the ground and send to the activated carbon adsorption unit 20 pounds of 1,1,1-trichloroethane and 10 pounds of MEK every month. The carbon is replaced every 10 months and the spent carbon is sent to ACME for incineration.

THRESHOLD DETERMINATION WORKSHEET

Reporting Year:

Chemical:

#	Mixture Name or Other Identifier	Information Source	Percent by Weight	Total Weight (lbs.)	Amount of Chemical by Activity (lbs.)		
					Manufactured	Processed	Otherwise Used
REPORTABLE SUBTOTAL							

EXEMPTION SECTION

#	Mixture Name or Other Identifier	Exemption	Note Fraction or Percent Exempt (if applicable)	Amount of Chemical by Activity (lbs.)		
				Manufactured	Processed	Otherwise Used
EXEMPT SUBTOTAL						
TOTAL (REPORTABLE – EXEMPT)						
REPORTING THRESHOLD						

THRESHOLD DETERMINATION WORKSHEET

Reporting Year:

Chemical:

#	Mixture Name or Other Identifier	Information Source	Percent by Weight	Total Weight (lbs.)	Amount of Chemical by Activity (lbs.)		
					Manufactured	Processed	Otherwise Used
REPORTABLE SUBTOTAL							

EXEMPTION SECTION

#	Mixture Name or Other Identifier	Exemption	Note Fraction or Percent Exempt (if applicable)	Amount of Chemical by Activity (lbs.)		
				Manufactured	Processed	Otherwise Used
EXEMPT SUBTOTAL						
TOTAL (REPORTABLE - EXEMPT)						
REPORTING THRESHOLD						

THRESHOLD DETERMINATION WORKSHEET

Reporting Year:

Chemical:

#	Mixture Name or Other Identifier	Information Source	Percent by Weight	Total Weight (lbs.)	Amount of Chemical by Activity (lbs.)		
					Manufactured	Processed	Otherwise Used
REPORTABLE SUBTOTAL							

EXEMPTION SECTION

#	Mixture Name or Other Identifier	Exemption	Note Fraction or Percent Exempt (if applicable)	Amount of Chemical by Activity (lbs.)		
				Manufactured	Processed	Otherwise Used
EXEMPT SUBTOTAL						
TOTAL (REPORTABLE - EXEMPT)						
REPORTING THRESHOLD						

THRESHOLD DETERMINATION WORKSHEET

Reporting Year:

Chemical:

#	Mixture Name or Other Identifier	Information Source	Percent by Weight	Total Weight (lbs.)	Amount of Chemical by Activity (lbs.)		
					Manufactured	Processed	Otherwise Used
REPORTABLE SUBTOTAL							

EXEMPTION SECTION

#	Mixture Name or Other Identifier	Exemption	Note Fraction or Percent Exempt (if applicable)	Amount of Chemical by Activity (lbs.)		
				Manufactured	Processed	Otherwise Used
EXEMPT SUBTOTAL						
TOTAL (REPORTABLE - EXEMPT)						
REPORTING THRESHOLD						

THRESHOLD DETERMINATION WORKSHEET

Reporting Year:

Chemical:

#	Mixture Name or Other Identifier	Information Source	Percent by Weight	Total Weight (lbs.)	Amount of Chemical by Activity (lbs.)		
					Manufactured	Processed	Otherwise Used
REPORTABLE SUBTOTAL							

EXEMPTION SECTION

#	Mixture Name or Other Identifier	Exemption	Note Fraction or Percent Exempt (if applicable)	Amount of Chemical by Activity (lbs.)		
				Manufactured	Processed	Otherwise Used
EXEMPT SUBTOTAL						
TOTAL (REPORTABLE – EXEMPT)						
REPORTING THRESHOLD						

THRESHOLD DETERMINATION WORKSHEET

Reporting Year:

Chemical:

#	Mixture Name or Other Identifier	Information Source	Percent by Weight	Total Weight (lbs.)	Amount of Chemical by Activity (lbs.)		
					Manufactured	Processed	Otherwise Used
REPORTABLE SUBTOTAL							

EXEMPTION SECTION

#	Mixture Name or Other Identifier	Exemption	Note Fraction or Percent Exempt (if applicable)	Amount of Chemical by Activity (lbs.)		
				Manufactured	Processed	Otherwise Used
EXEMPT SUBTOTAL						
TOTAL (REPORTABLE – EXEMPT)						
REPORTING THRESHOLD						

EPA FORM R
PART II. CHEMICAL-SPECIFIC INFORMATION

TRI Facility ID Number

Toxic Chemical, Category or Generic Name

SECTION 1. TOXIC CHEMICAL IDENTITY

(Important: DO NOT complete this section if you completed Section 2 below.)

1.1 CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)

1.2 Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)

1.3 Generic Chemical Name (Important: Complete only if Part 1, Section 2.1 is checked "yes". Generic Name must be structurally descriptive.)

1.4 Distribution of Each Member of the Dioxin and Dioxin-like Compounds Category.

(If there are any numbers in boxes 1-17, then every field must be filled in with either 0 or some number between 0.01 and 100. Distribution should be reported in percentages and the total should equal 100%. If you do not have speciation data available, indicate NA.)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

NA ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

SECTION 2. MIXTURE COMPONENT IDENTITY

(Important: DO NOT complete this section if you completed Section 1 above.)

2.1 Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY

(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:**3.2** Process the toxic chemical:**3.3** Otherwise use the toxic chemical:

a. ☐ Produce b. ☐ Import

If produce or import:

c. ☐ For on-site use/processingd. ☐ For sale/distributione. ☐ As a byproductf. ☐ As an impuritya. ☐ As a reactantb. ☐ As a formulation componentc. ☐ As an article componentd. ☐ Repackaginge. ☐ As an impuritya. ☐ As a chemical processing aidb. ☐ As a manufacturing aidc. ☐ Ancillary or other use**SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR**

4.1 (Enter two-digit code from instruction package.)

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE

A. Total Release (pounds/year*)
(Enter range code or estimate**)

B. Basis of Estimate
(enter code)

C. % From Stormwater

5.1 Fugitive or non-point air emissions NA ☐

5.2 Stack or point air emissions NA ☐

5.3 Discharges to receiving streams or water bodies (enter one name per box)

Stream or Water Body Name

5.3.1 **5.3.2** **5.3.3**

If additional pages of Part II, Section 5.3 are attached, indicate the total number of pages in this box and indicate the Part II, Section 5.3 page number in this box. (example: 1,2,3, etc.)

* For Dioxin or Dioxin-like compounds, report in grams/year

** Range Codes: A= 1 - 10 pounds; B= 11- 499 pounds; C= 500 - 999 pounds.

EPA FORM R
PART II. CHEMICAL-SPECIFIC INFORMATION

TRI Facility ID Number

Toxic Chemical, Category or Generic Name

SECTION 1. TOXIC CHEMICAL IDENTITY

(Important: DO NOT complete this section if you completed Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)																																		
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)																																		
1.3	Generic Chemical Name (Important: Complete only if Part 1, Section 2.1 is checked "yes". Generic Name must be structurally descriptive.)																																		
1.4	Distribution of Each Member of the Dioxin and Dioxin-like Compounds Category. (If there are any numbers in boxes 1-17, then every field must be filled in with either 0 or some number between 0.01 and 100. Distribution should be reported in percentages and the total should equal 100%. If you do not have speciation data available, indicate NA.) <table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td> </tr> <tr> <td>NA</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	NA																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17																			
NA																																			

SECTION 2. MIXTURE COMPONENT IDENTITY

(Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)
------------	--

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY

(Important: Check all that apply.)

3.1	Manufacture the toxic chemical:	3.2	Process the toxic chemical:	3.3	Otherwise use the toxic chemical:
a. <input type="checkbox"/> Produce b. <input type="checkbox"/> Import If produce or import: c. <input type="checkbox"/> For on-site use/processing d. <input type="checkbox"/> For sale/distribution e. <input type="checkbox"/> As a byproduct f. <input type="checkbox"/> As an impurity	a. <input type="checkbox"/> As a reactant b. <input type="checkbox"/> As a formulation component c. <input type="checkbox"/> As an article component d. <input type="checkbox"/> Repackaging e. <input type="checkbox"/> As an impurity	a. <input type="checkbox"/> As a chemical processing aid b. <input type="checkbox"/> As a manufacturing aid c. <input type="checkbox"/> Ancillary or other use			

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR

4.1	<input type="text"/> (Enter two-digit code from instruction package.)
------------	---

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE

		A. Total Release (pounds/year*) (Enter range code or estimate**)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	NA <input type="checkbox"/>		
5.2	Stack or point air emissions	NA <input type="checkbox"/>		
5.3	Discharges to receiving streams or water bodies (enter one name per box)			
Stream or Water Body Name				
5.3.1				
5.3.2				
5.3.3				

If additional pages of Part II, Section 5.3 are attached, indicate the total number of pages in this box and indicate the Part II, Section 5.3 page number in this box. (example: 1,2,3, etc.)

* For Dioxin or Dioxin-like compounds, report in grams/year

** Range Codes: A= 1 - 10 pounds; B= 11- 499 pounds; C= 500 - 999 pounds.

EPA FORM R
PART II. CHEMICAL-SPECIFIC INFORMATION

TRI Facility ID Number

Toxic Chemical, Category or Generic Name

SECTION 1. TOXIC CHEMICAL IDENTITY

(Important: DO NOT complete this section if you completed Section 2 below.)

1.1 CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)

1.2 Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)

1.3 Generic Chemical Name (Important: Complete only if Part 1, Section 2.1 is checked "yes". Generic Name must be structurally descriptive.)

1.4 Distribution of Each Member of the Dioxin and Dioxin-like Compounds Category.

(If there are any numbers in boxes 1-17, then every field must be filled in with either 0 or some number between 0.01 and 100. Distribution should be reported in percentages and the total should equal 100%. If you do not have speciation data available, indicate NA.)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
NA																	

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1 Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY

(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:

a. ☐ Produce b. ☐ Import

If produce or import:

c. ☐ For on-site use/processingd. ☐ For sale/distributione. ☐ As a byproductf. ☐ As an impurity

3.2 Process the toxic chemical:

a. ☐ As a reactantb. ☐ As a formulation componentc. ☐ As an article componentd. ☐ Repackaginge. ☐ As an impurity

3.3 Otherwise use the toxic chemical:

a. ☐ As a chemical processing aidb. ☐ As a manufacturing aidc. ☐ Ancillary or other use**SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR**4.1 (Enter two-digit code from instruction package.)**SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE**

		A. Total Release (pounds/year*) (Enter range code or estimate**)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	NA <input type="checkbox"/>		
5.2	Stack or point air emissions	NA <input type="checkbox"/>		
5.3	Discharges to receiving streams or water bodies (enter one name per box)			
Stream or Water Body Name				
5.3.1				
5.3.2				
5.3.3				

If additional pages of Part II, Section 5.3 are attached, indicate the total number of pages in this box and indicate the Part II, Section 5.3 page number in this box. (example: 1,2,3, etc.)

* For Dioxin or Dioxin-like compounds, report in grams/year

** Range Codes: A= 1 - 10 pounds; B= 11- 499 pounds; C= 500 - 999 pounds.

Table II. EPCRA Section 313 Chemical List For Reporting Year 2005 (including Toxic Chemical Categories)

Individually listed EPCRA Section 313 chemicals with CAS numbers are arranged alphabetically starting on page II-3. Following the alphabetical list, the EPCRA Section 313 chemicals are arranged in CAS number order. Covered chemical categories follow.

Certain EPCRA Section 313 chemicals listed in Table II have parenthetical “qualifiers.” These qualifiers indicate that these EPCRA Section 313 chemicals are subject to the section 313 reporting requirements if manufactured, processed, or otherwise used in a specific form or when a certain activity is performed. The following chemicals are reportable only if they are manufactured, processed, or otherwise used in the specific form(s) listed below:

<u>Chemical</u>	<u>CAS Number</u>	<u>Qualifier</u>
Aluminum (fume or dust)	7429-90-5	<u>Only</u> if it is a fume or dust form.
Aluminum oxide (fibrous forms)	1344-28-1	<u>Only</u> if it is a fibrous form.
Ammonia (includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing)	7664-41-7	<u>Only</u> 10% of aqueous forms. 100% of anhydrous forms.
Asbestos (friable)	1332-21-4	<u>Only</u> if it is a friable form.
Hydrochloric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)	7647-01-0	<u>Only</u> if it is an aerosol form as defined.
Phosphorus (yellow or white)	7723-14-0	<u>Only</u> if it is a yellow or white form.
Sulfuric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)	7664-93-9	<u>Only</u> if it is an aerosol form as defined.
Vanadium (except when contained in an alloy)	7440-62-2	<u>Except</u> if it is contained in an alloy.
Zinc (fume or dust)	7440-66-6	<u>Only</u> if it is in a fume or dust form.

The qualifier for the following three chemicals is based on the chemical activity rather than the form of the chemical. These chemicals are subject to EPCRA section 313 reporting requirements only when the indicated activity is performed.

<u>Chemical/ Chemical Category</u>	<u>CAS Number</u>	<u>Qualifier</u>
Dioxin and dioxin-like compounds (manufacturing; and the processing or otherwise use of dioxin and dioxin-like compounds if the dioxin and dioxin-like compounds are present as contaminants in a chemical and if they were created during the manufacture of that chemical.)	NA	<u>Only</u> if they are manufactured at the facility; or are processed or otherwise used when present as contaminants in a chemical but only if they were created during the manufacture of that chemical.
Isopropyl alcohol (only persons who manufacture by the strong acid process are subject, no supplier notification)	67-63-0	<u>Only</u> if it is being manufactured by the strong acid process. Facilities that process or otherwise use isopropyl alcohol are <u>not</u> covered.
Saccharin (only persons who manufacture are subject, no supplier notification)	81-07-2	<u>Only</u> if it is being manufactured.

There are no supplier notification requirements for isopropyl alcohol and saccharin since the processors and users of these chemicals are not required to report. Manufacturers of these chemicals do not need to notify their customers that these are reportable EPCRA section 313 chemicals.

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Note: Chemicals may be added to or deleted from the list. The Emergency Planning and Community Right-to-Know Call Center will provide up-to-date information on the status of these changes. See section B.3.c of the instructions for more information on the *de minimis* values listed below. There are no *de minimis* levels for PBT chemicals since the *de minimis* exemption is not available for these chemicals (an asterisk appears where a *de minimis* limit would otherwise appear in Table II). However, for purposes of the supplier notification requirement only, such limits are provided in Appendix D.

Chemical Qualifiers

This table contains the list of individual EPCRA Section 313 chemicals and categories of chemicals subject to 2005 calendar year reporting. Some of the EPCRA Section 313 chemicals listed have parenthetical qualifiers listed next to them. An EPCRA Section 313 chemical that is listed without a qualifier is subject to reporting in all forms in which it is manufactured, processed, and otherwise used.

Fume or dust. Two of the metals on the list (aluminum and zinc) contain the qualifier “fume or dust.” Fume or dust refers to dry forms of these metals but does not refer to “wet” forms such as solutions or slurries. As explained in Section B.3.a of these instructions, the term manufacture includes the generation of an EPCRA Section 313 chemical as a byproduct or impurity. In such cases, a facility should determine if, for example, it generated more than 25,000 pounds of aluminum fume or dust in the reporting year as a result of its activities. If so, the facility must report that it manufactures “aluminum (fume or dust).” Similarly, there may be certain technologies in which one of these metals is processed in the form of a fume or dust to make other EPCRA Section 313 chemicals or other products for distribution in commerce. In reporting releases, the facility would only report releases of the fume or dust.

EPA considers dusts to consist of solid particles generated by any mechanical processing of materials including crushing, grinding, rapid impact, handling, detonation, and decrepitation of organic and inorganic materials such as rock, ore, and metal. Dusts do not tend to flocculate, except under electrostatic forces.

EPA considers a fume to be an airborne dispersion consisting of small solid particles created by condensation from a gaseous state, in distinction to a gas or vapor. Fumes arise from the heating of solids such as lead. The condensation is often accompanied by a chemical reaction, such as oxidation. Fumes flocculate and sometimes coalesce.

Manufacturing qualifiers. Two of the entries in the EPCRA Section 313 chemical list contain a qualifier relating to manufacture. For isopropyl alcohol, the qualifier is “only persons who manufacture by the strong acid process are subject, no supplier notification.” For saccharin, the qualifier is “only persons who manufacture are subject, no supplier notification.”

For isopropyl alcohol, the qualifier means that only facilities manufacturing isopropyl alcohol by the strong acid process are required to report. In the case of saccharin, only manufacturers of the EPCRA Section 313 chemical are subject to the reporting requirements. A facility that only processes or otherwise uses either of these EPCRA Section 313 chemicals would not be required to report for these EPCRA Section 313 chemicals. In both cases, supplier notification does not apply because only manufacturers, not users, of these two EPCRA Section 313 chemicals must report.

Ammonia (includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing). The qualifier for ammonia means that anhydrous forms of ammonia are 100% reportable and aqueous forms are limited to 10% of total aqueous ammonia. Therefore when determining threshold and releases and other waste management quantities all anhydrous ammonia is included but only 10% of total aqueous ammonia is included. Any evaporation of ammonia from aqueous ammonia solutions is considered anhydrous ammonia and should be included in threshold determinations and release and other waste management calculations.

Sulfuric acid and Hydrochloric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size). The qualifier for sulfuric acid and hydrochloric acid means that the only forms of these chemicals that are reportable are airborne forms. Aqueous solutions are not covered by this listing but any aerosols generated from aqueous solutions are covered.

Nitrate compounds (water dissociable; reportable only when in aqueous solution). The qualifier for the nitrate compounds category limits the reporting to nitrate compounds that dissociate in water, generating nitrate ion. For the purposes of threshold determinations the entire weight of the nitrate compound must be included in all calculations. For the purposes of reporting releases and other waste management quantities only the weight of the nitrate ion should be included in the calculations of these quantities.

Phosphorus (yellow or white). The listing for phosphorus is qualified by the term “yellow or white.” This means that only manufacturing, processing, or otherwise use of phosphorus in the

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CAS Number	Chemical Name	<i>De Minimis</i> Limit	CAS Number	Chemical Name	<i>De Minimis</i> Limit
33089-61-1	Amitraz	1.0	314-40-9	Bromacil	1.0
61-82-5	Amitrole	0.1		(5-Bromo-6-methyl-3-(1-methylpropyl)-2,4(1H,3H)-pyrimidinedione)	
7664-41-7	Ammonia	1.0	53404-19-6	Bromacil, lithium salt	1.0
	(includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing)			[2,4(1H,3H)-Pyrimidinedione,5-bromo-6-methyl-3-(1-methylpropyl), lithium salt]	
101-05-3	Anilazine	1.0	7726-95-6	Bromine	1.0
	[4,6-Dichloro-N-(2-chlorophenyl)-1,3,5-triazin-2-amine]		35691-65-7	1-Bromo-1-(bromomethyl)-1,3-propanedicarbonitrile	1.0
62-53-3	Aniline	1.0	353-59-3	Bromochlorodifluoromethane	1.0
90-04-0	o-Anisidine	0.1		(Halon 1211)	
104-94-9	p-Anisidine	1.0	75-25-2	Bromoform (Tribromomethane)	1.0
134-29-2	o-Anisidine hydrochloride	0.1	74-83-9	Bromomethane	1.0
120-12-7	Anthracene	1.0		(Methyl bromide)	
7440-36-0	Antimony	1.0	75-63-8	Bromotrifluoromethane	1.0
7440-38-2	Arsenic	0.1		(Halon 1301)	
1332-21-4	Asbestos (friable)	0.1	1689-84-5	Bromoxynil	1.0
1912-24-9	Atrazine	1.0		(3,5-Dibromo-4-hydroxybenzonitrile)	
	(6-Chloro-N-ethyl-N'-(1-methylethyl)-1,3,5-triazine-2,4-diamine)		1689-99-2	Bromoxynil octanoate	1.0
7440-39-3	Barium	1.0		(Octanoic acid, 2,6-dibromo-4-cyanophenylester)	
22781-23-3	Bendiocarb	1.0	357-57-3	Brucine	1.0
	[2,2-Dimethyl-1,3-benzodioxol-4-ol methylcarbamate]		106-99-0	1,3-Butadiene	0.1
1861-40-1	Benfluralin	1.0	141-32-2	Butyl acrylate	1.0
	(N-Butyl-N-ethyl-2,6-dinitro-4-(trifluoromethyl)benzenamine)		71-36-3	n-Butyl alcohol	1.0
17804-35-2	Benomyl	1.0	78-92-2	sec-Butyl alcohol	1.0
98-87-3	Benzal chloride	1.0	75-65-0	tert-Butyl alcohol	1.0
55-21-0	Benzamide	1.0	106-88-7	1,2-Butylene oxide	0.1
71-43-2	Benzene	0.1	123-72-8	Butyraldehyde	1.0
92-87-5	Benzidine	0.1	7440-43-9	Cadmium	0.1
98-07-7	Benzoic trichloride	0.1	156-62-7	Calcium cyanamide	1.0
	(Benzotrichloride)		133-06-2	Captan	1.0
191-24-2	Benzo(g,h,i)perylene	*		[1H-Isoindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro-2-[(trichloromethyl)thio]-]	
98-88-4	Benzoyl chloride	1.0	63-25-2	Carbaryl [1-Naphthalenol, methylcarbamate]	1.0
94-36-0	Benzoyl peroxide	1.0		Carbofuran	1.0
100-44-7	Benzyl chloride	1.0	1563-66-2	Carbon disulfide	1.0
7440-41-7	Beryllium	0.1	75-15-0	Carbon tetrachloride	0.1
82657-04-3	Bifenthrin	1.0	56-23-5	Carbonyl sulfide	1.0
92-52-4	Biphenyl	1.0	463-58-1	Carboxin	1.0
111-91-1	Bis(2-chloroethoxy) methane	1.0	5234-68-4	(5,6-Dihydro-2-methyl-N-phenyl-1,4-oxathiin-3-carboxamide)	
111-44-4	Bis(2-chloroethyl) ether	1.0		Catechol	0.1
542-88-1	Bis(chloromethyl) ether	0.1	120-80-9	Chinomethionat	1.0
108-60-1	Bis(2-chloro-1-methylethyl)ether	1.0	2439-01-2	[6-Methyl-1,3-dithiolo[4,5-b]quinoxalin-2-one]	
56-35-9	Bis(tributyltin) oxide	1.0		Chloramben	1.0
10294-34-5	Boron trichloride	1.0	133-90-4	[Benzoic acid, 3-amino-2,5-dichloro-]	
7637-07-2	Boron trifluoride	1.0	57-74-9	Chlordane	*
				[4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-]	

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CAS Number	Chemical Name	<i>De Minimis</i> Limit	CAS Number	Chemical Name	<i>De Minimis</i> Limit
115-28-6	Chlorendic acid	0.1	7440-47-3	Chromium	1.0
90982-32-4	Chlorimuron ethyl [Ethyl-2-[[[(4-chloro-6-methoxyprimidin-2-yl)amino]carbonyl]amino]sulfonyl] benzoate]	1.0	4680-78-8	C.I. Acid Green 3	1.0
7782-50-5	Chlorine	1.0	6459-94-5	C.I. Acid Red 114	0.1
10049-04-4	Chlorine dioxide	1.0	569-64-2	C.I. Basic Green 4	1.0
79-11-8	Chloroacetic acid	1.0	989-38-8	C.I. Basic Red 1	1.0
532-27-4	2-Chloroacetophenone	1.0	1937-37-7	C.I. Direct Black 38	0.1
4080-31-3	1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride	1.0	2602-46-2	C.I. Direct Blue 6	0.1
106-47-8	p-Chloroaniline	0.1	28407-37-6	C.I. Direct Blue 218	1.0
108-90-7	Chlorobenzene	1.0	16071-86-6	C.I. Direct Brown 95	0.1
510-15-6	Chlorobenzilate [Benzeneacetic acid, 4-chloro-.alpha.- (4-chlorophenyl)-.alpha.-hydroxy-, ethyl ester]	1.0	2832-40-8	C.I. Disperse Yellow 3	1.0
75-68-3	1-Chloro-1,1-difluoroethane (HCFC-142b)	1.0	3761-53-3	C.I. Food Red 5	0.1
75-45-6	Chlorodifluoromethane (HCFC-22)	1.0	81-88-9	C.I. Food Red 15	1.0
75-00-3	Chloroethane (Ethyl chloride)	1.0	3118-97-6	C.I. Solvent Orange 7	1.0
67-66-3	Chloroform	0.1	97-56-3	C.I. Solvent Yellow 3	0.1
74-87-3	Chloromethane (Methyl chloride)	1.0	842-07-9	C.I. Solvent Yellow 14	1.0
107-30-2	Chloromethyl methyl ether	0.1	492-80-8	C.I. Solvent Yellow 34 (Auramine)	0.1
563-47-3	3-Chloro-2-methyl-1-propene	0.1	128-66-5	C.I. Vat Yellow 4	1.0
104-12-1	p-Chlorophenyl isocyanate	1.0	7440-48-4	Cobalt	0.1
76-06-2	Chloropicrin	1.0	7440-50-8	Copper	1.0
126-99-8	Chloroprene	0.1	8001-58-9	Creosote	0.1
542-76-7	3-Chloropropionitrile	1.0	120-71-8	p-Cresidine	0.1
63938-10-3	Chlorotetrafluoroethane	1.0	108-39-4	m-Cresol	1.0
354-25-6	1-Chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)	1.0	95-48-7	o-Cresol	1.0
2837-89-0	2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)	1.0	106-44-5	p-Cresol	1.0
1897-45-6	Chlorothalonil [1,3-Benzenedicarbonitrile, 2,4,5,6-tetrachloro-]	0.1	1319-77-3	Cresol (mixed isomers)	1.0
95-69-2	p-Chloro-o-toluidine	0.1	4170-30-3	Crotonaldehyde	1.0
75-88-7	2-Chloro-1,1,1-trifluoroethane (HCFC-133a)	1.0	98-82-8	Cumene	1.0
75-72-9	Chlorotrifluoromethane (CFC-13)	1.0	80-15-9	Cumene hydroperoxide	1.0
460-35-5	3-Chloro-1,1,1-trifluoropropane (HCFC-253fb)	1.0	135-20-6	Cupferron [Benzeneamine, N-hydroxy-N-nitroso, ammonium salt]	0.1
5598-13-0	Chlorpyrifos methyl [O,O-Dimethyl-O-(3,5,6-trichloro-2-pyridyl)phosphorothioate]	1.0	21725-46-2	Cyanazine	1.0
64902-72-3	Chlorsulfuron [2-Chloro-N-[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl]benzenesulfonamide]	1.0	1134-23-2	Cycloate	1.0
			110-82-7	Cyclohexane	1.0
			108-93-0	Cyclohexanol	1.0
			68359-37-5	Cyfluthrin [3-(2,2-Dichloroethenyl)-2,2-dimethylcyclopropanecarboxylic acid, cyano(4-fluoro-3-phenoxyphenyl) methyl ester]	1.0
			68085-85-8	Cyhalothrin [3-(2-Chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropane-carboxylic acid cyano(3-phenoxyphenyl)methyl ester]	1.0
			94-75-7	2,4-D [Acetic acid, (2,4-dichlorophenoxy)-]	0.1
			533-74-4	Dazomet (Tetrahydro-3,5-dimethyl-2H-1,3,5-thiadiazine-2-thione)	1.0

Table II

CAS Number	Chemical Name	<i>De Minimis</i> Limit	CAS Number	Chemical Name	<i>De Minimis</i> Limit
137-42-8	Metham sodium (Sodium methylthiocarbamate)	1.0	505-60-2	Mustard gas [Ethane, 1,1'-thiobis[2-chloro-]]	0.1
67-56-1	Methanol	1.0	88671-89-0	Myclobutanil [.alpha.-Butyl-.alpha.-(4-chlorophenyl)-1H-1,2,4-triazole-1-propanenitrile]	1.0
20354-26-1	Methazole [2-(3,4-Dichlorophenyl)-4-methyl-1,2,4-oxadiazolidine-3,5-dione]	1.0	142-59-6	Nabam	1.0
2032-65-7	Methiocarb	1.0	300-76-5	Naled	1.0
94-74-6	Methoxone ((4-Chloro-2-methylphenoxy) acetic acid) (MCPA)	0.1	91-20-3	Naphthalene	0.1
3653-48-3	Methoxone sodium salt ((4-Chloro-2-methylphenoxy) acetate sodium salt)	0.1	134-32-7	alpha-Naphthylamine	0.1
72-43-5	Methoxychlor [Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-methoxy-]]	*	91-59-8	beta-Naphthylamine	0.1
109-86-4	2-Methoxyethanol	1.0	7440-02-0	Nickel	0.1
96-33-3	Methyl acrylate	1.0	1929-82-4	Nitrapyrin (2-Chloro-6-(trichloromethyl)pyridine)	1.0
1634-04-4	Methyl tert-butyl ether	1.0	7697-37-2	Nitric acid	1.0
79-22-1	Methyl chlorocarbonate	1.0	139-13-9	Nitriilotriacetic acid	0.1
101-14-4	4,4'-Methylenebis(2-chloroaniline) (MBOCA)	0.1	100-01-6	p-Nitroaniline	1.0
101-61-1	4,4'-Methylenebis(N,N-dimethyl) benzenamine	0.1	99-59-2	5-Nitro-o-anisidine	1.0
74-95-3	Methylene bromide	1.0	98-95-3	Nitrobenzene	0.1
101-77-9	4,4'-Methylenedianiline	0.1	92-93-3	4-Nitrobiphenyl	0.1
78-93-3	Methyl ethyl ketone	1.0	1836-75-5	Nitrofen [Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-]	0.1
60-34-4	Methyl hydrazine	1.0	51-75-2	Nitrogen mustard [2-Chloro-N-(2-chloroethyl)-N-methylethanamine]	0.1
74-88-4	Methyl iodide	1.0	55-63-0	Nitroglycerin	1.0
108-10-1	Methyl isobutyl ketone	1.0	88-75-5	2-Nitrophenol	1.0
624-83-9	Methyl isocyanate	1.0	100-02-7	4-Nitrophenol	1.0
556-61-6	Methyl isothiocyanate [Isothiocyanatomethane]	1.0	79-46-9	2-Nitropropane	0.1
75-86-5	2-Methylactonitrile	1.0	924-16-3	N-Nitrosodi-n-butylamine	0.1
80-62-6	Methyl methacrylate	1.0	55-18-5	N-Nitrosodiethylamine	0.1
924-42-5	N-Methylolacrylamide	1.0	62-75-9	N-Nitrosodimethylamine	0.1
298-00-0	Methyl parathion	1.0	86-30-6	N-Nitrosodiphenylamine	1.0
109-06-8	2-Methylpyridine	1.0	156-10-5	p-Nitrosodiphenylamine	1.0
872-50-4	N-Methyl-2-pyrrolidone	1.0	621-64-7	N-Nitrosodi-n-propylamine	0.1
9006-42-2	Metiram	1.0	759-73-9	N-Nitroso-N-ethylurea	0.1
21087-64-9	Metribuzin	1.0	684-93-5	N-Nitroso-N-methylurea	0.1
7786-34-7	Mevinphos	1.0	4549-40-0	N-Nitrosomethylvinylamine	0.1
90-94-8	Michler's ketone	0.1	59-89-2	N-Nitrosomorpholine	0.1
2212-67-1	Molinate (1H-Azepine-1-carbothioic acid, hexahydro-, S-ethyl ester)	1.0	16543-55-8	N-Nitrosornicotine	0.1
1313-27-5	Molybdenum trioxide	1.0	100-75-4	N-Nitrosopiperidine	0.1
76-15-3	Monochloropentafluoroethane (CFC-115)	1.0	99-55-8	5-Nitro-o-toluidine	1.0
150-68-5	Monuron	1.0	27314-13-2	Norflurazon [4-Chloro-5-(methylamino)-2-[3-(trifluoromethyl)phenyl]-3(2H)-pyridazinone]	1.0
			2234-13-1	Octachloronaphthalene	1.0
			29082-74-4	Octachlorostyrene	*
			19044-88-3	Oryzalin [4-(Dipropylamino)-3,5-dinitrobenzene sulfonamide]	1.0
			20816-12-0	Osmium tetroxide	1.0

Table II

			b. Individually Listed Toxic Chemicals Arranged by CAS Number		
CAS Number	Chemical Name	De Minimis Limit	CAS Number	Chemical Name	De Minimis Limit
52-68-6	Trichlorfon [Phosphoric acid,(2,2,2-trichloro-1-hydroxyethyl)-, dimethyl ester]	1.0	50-00-0	Formaldehyde	0.1
76-02-8	Trichloroacetyl chloride	1.0	51-03-6	Piperonyl butoxide	1.0
120-82-1	1,2,4-Trichlorobenzene	1.0	51-21-8	Fluorouracil (5-Fluorouracil)	1.0
71-55-6	1,1,1-Trichloroethane (Methyl chloroform)	1.0	51-28-5	2,4-Dinitrophenol	1.0
79-00-5	1,1,2-Trichloroethane	1.0	51-75-2	Nitrogen mustard [2-Chloro-N-(2-chloroethyl)-N-methylethanamine]	0.1
79-01-6	Trichloroethylene	0.1	51-79-6	Urethane (Ethyl carbamate)	0.1
75-69-4	Trichlorofluoromethane (CFC-11)	1.0	52-68-6	Trichlorfon [Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)-, dimethyl ester]	1.0
95-95-4	2,4,5-Trichlorophenol	1.0	52-85-7	Famphur	1.0
88-06-2	2,4,6-Trichlorophenol	0.1	53-96-3	2-Acetylaminofluorene	0.1
96-18-4	1,2,3-Trichloropropane	0.1	55-18-5	N-Nitrosodiethylamine	0.1
57213-69-1	Triclopyr triethylammonium salt	1.0	55-21-0	Benzamide	1.0
121-44-8	Triethylamine	1.0	55-38-9	Fenthion [O,O-Dimethyl O-[3-methyl-4-(methylthio)phenyl] ester, phosphorothioic acid]	1.0
1582-09-8	Trifluralin [Benzeneamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-]	*	55-63-0	Nitroglycerin	1.0
26644-46-2	Triforine [N,N'-[1,4-Piperazinediylbis-(2,2,2-trichloroethylidene)]bisformamide]	1.0	56-23-5	Carbon tetrachloride	0.1
95-63-6	1,2,4-Trimethylbenzene	1.0	56-35-9	Bis(tributyltin) oxide	1.0
2655-15-4	2,3,5-Trimethylphenyl methylcarbamate	1.0	56-38-2	Parathion [Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenyl) ester]	1.0
639-58-7	Triphenyltin chloride	1.0	57-14-7	1,1-Dimethylhydrazine	0.1
76-87-9	Triphenyltin hydroxide	1.0	57-33-0	Pentobarbital sodium	1.0
126-72-7	Tris(2,3-dibromopropyl) phosphate	0.1	57-41-0	Phenytoin	0.1
72-57-1	Trypan blue	0.1	57-57-8	beta-Propiolactone	0.1
51-79-6	Urethane (Ethyl carbamate)	0.1	57-74-9	Chlordane [4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-]	*
7440-62-2	Vanadium (except when contained in an alloy)	1.0	58-89-9	Lindane [Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1.alpha.,2.alpha.,3.beta.,4.alpha.,5.alpha.,6.beta.)-]	0.1
50471-44-8	Vinclozolin [3-(3,5-Dichlorophenyl)-5-ethenyl-5-methyl-2,4-oxazolidinedione]	1.0	59-89-2	N-Nitrosomorpholine	0.1
108-05-4	Vinyl acetate	0.1	60-09-3	4-Aminoazobenzene	0.1
593-60-2	Vinyl bromide	0.1	60-11-7	4-Dimethylaminoazobenzene	0.1
75-01-4	Vinyl chloride	0.1	60-34-4	Methyl hydrazine	1.0
75-35-4	Vinylidene chloride	1.0	60-35-5	Acetamide	0.1
108-38-3	m-Xylene	1.0	60-51-5	Dimethoate	1.0
95-47-6	o-Xylene	1.0	61-82-5	Amitrole	0.1
106-42-3	p-Xylene	1.0	62-53-3	Aniline	1.0
1330-20-7	Xylene (mixed isomers)	1.0	62-55-5	Thioacetamide	0.1
87-62-7	2,6-Xylidine	0.1			
7440-66-6	Zinc (fume or dust)	1.0			
12122-67-7	Zineb [Carbamodithioic acid, 1,2-ethanediyibis-, zinc complex]	1.0			

Table II

CAS Number	Chemical Name	De Minimis Limit	
74051-80-2	Sethoxydim [2-[1-(Ethoxyimino)butyl]-5-[2-(ethylthio)propyl]-3-hydroxyl-2-cyclohexen-1-one]	1.0	N010 Antimony Compounds (1.0) <i>Includes any unique chemical substance that contains antimony as part of that chemical's infrastructure.</i>
76578-14-8	Quizalofop-ethyl [2-[4-[(6-Chloro-2-quinoxalinyloxy]phenoxy]propanoic acid ethyl ester]	1.0	N020 Arsenic Compounds (inorganic compounds: 0.1; organic compounds: 1.0) <i>Includes any unique chemical substance that contains arsenic as part of that chemical's infrastructure.</i>
77501-63-4	Lactofen [Benzoic acid, 5-[2-Chloro-4-(trifluoromethyl)phenoxy]-2-nitro-, 2-ethoxy-1-methyl-2-oxoethyl ester]	1.0	N040 Barium Compounds (1.0) <i>Includes any unique chemical substance that contains barium as part of that chemical's infrastructure. This category does not include: Barium sulfate CAS Number 7727-43-7</i>
82657-04-3	Bifenthrin	1.0	N050 Beryllium Compounds (0.1) <i>Includes any unique chemical substance that contains beryllium as part of that chemical's infrastructure.</i>
88671-89-0	Myclobutanil [.alpha.-Butyl-.alpha.-(4-chlorophenyl)-1H-1,2,4-triazole-1-propanenitrile]	1.0	N078 Cadmium Compounds (0.1) <i>Includes any unique chemical substance that contains cadmium as part of that chemical's infrastructure.</i>
90454-18-5	Dichloro-1,1,2-trifluoroethane	1.0	N084 Chlorophenols (0.1)
90982-32-4	Chlorimuron ethyl [Ethyl-2-[[[(4-chloro-6-methoxyprimidin-2-yl)amino]carbonyl]amino]sulfonyl]benzoate]	1.0	
101200-48-0	Tribenuron methyl [2-[[[(4-Methoxy-6-methyl-1,3,5-triazin-2-yl)methylamino]carbonyl]amino]sulfonyl]benzoic acid methyl ester]	1.0	
111512-56-2	1,1-Dichloro-1,2,3,3,3-pentafluoropropane (HCFC-225eb)	1.0	
111984-09-9	3,3'-Dimethoxybenzidine hydrochloride (o-Dianisidine hydrochloride)	0.1	
127564-92-5	Dichloropentafluoropropane	1.0	
128903-21-9	2,2-Dichloro-1,1,1,3,3-pentafluoropropane (HCFC-225aa)	1.0	
136013-79-1	1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225ea)	1.0	

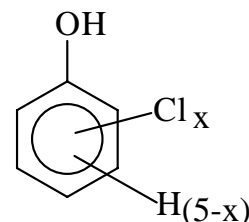
c. Chemical Categories

Section 313 requires reporting on the EPCRA Section 313 chemical categories listed below, in addition to the specific EPCRA Section 313 chemicals listed above.

The metal compound categories listed below, unless otherwise specified, are defined as including any unique chemical substance that contains the named metal (e.g., antimony, nickel, etc.) as part of that chemical's structure.

EPCRA Section 313 chemical categories are subject to the 1% *de minimis* concentration unless the substance involved meets the definition of an OSHA carcinogen in which case the 0.1% *de minimis* concentration applies. The *de minimis* concentration for each category is provided in parentheses. The *de minimis* exemption is not available for PBT chemicals, therefore an asterisk appears where a *de minimis* limit would otherwise

appear. However, for purposes of the supplier notification requirement only, such limits are provided in Appendix D.



Where $x = 1$ to 5

N090 **Chromium Compounds**
(except for chromite ore mined in the Transvaal Region of South Africa and the unreacted ore component of the chromite ore processing residue (COPR). COPR is the solid waste remaining after aqueous extraction of oxidized chromite ore that has been combined with soda ash and kiln roasted at approximately 2,000 deg.F.)
(chromium VI compounds: 0.1; chromium III compounds: 1.0)
Includes any unique chemical substance that contains chromium as part of that chemical's infrastructure.

EXERCISE #2: DETERMINING THRESHOLDS MANUFACTURING CASE STUDY

SOLUTION

Chemical	Quantity	Status
Copper	90.0 wt% x 100,000 lbs. = 90,000 lbs. copper processed	Copper is processed in excess of the 25,000-lb. processing threshold. The articles exemption is negated for all tubing because over 0.5 pounds of copper is released and not recovered.
HCFC-22	The quantity removed from the storage tank is the best approximation of use in this case. 20,000 pounds + (15,000 pounds - 9,000 pounds) = 26,000 pounds Conc. range is 98.0 to 100.0 %. Midpoint is 99.0%. 99.0 wt% x 26,000 lbs. = 25,740 lbs. HCFC-22 processed	HCFC-22 is processed in excess of the 25,000-lb. processing threshold.
MEK	<u>Paint (AC Components):</u> 10.0 wt% x 110,000 lbs. = 11,000 lbs. MEK otherwise used <u>Adhesive:</u> 12.0 wt% x 10,000 lbs. = 1,200 lbs. MEK otherwise used <u>Paint (Buildings):</u> 5.0 wt% x 20,000 lbs. = 1,000 lbs. MEK otherwise used	MEK used in painting buildings is exempt due to structural component exemption. Still, 12,200 lbs. of MEK is otherwise used, exceeding the 10,000-lb. otherwise use threshold. The MEK from soil remediation is not considered towards an activity threshold determination.
Barium Compounds	4.0 wt% x 300,000 lbs. = 12,000 lbs. barium hydroxide	Barium compounds are processed below the 25,000-lb. processing threshold.

Ammonia	1 lb. anhydrous ammonia manufactured/ 100 lb. of resin x 300,000 lb. resin = 3,000 lb. of anhydrous ammonia manufactured	Anhydrous ammonia is manufactured below the 25,000-lb. manufacturing threshold.
Zinc (fume or dust)	<u>Tubing</u> : 9.2% x 100,000 lbs. = 9,200 lbs. of elemental zinc; therefore, zinc fume or dust would be < 9,200 lbs. <u>Resin</u> : 1.5% x 300,000 lbs. = 4,500 lbs. of elemental zinc; therefore, zinc fume or dust would be <4,500 lbs.	No data are available to indicate quantity of zinc fume or dust manufactured as by- product from these uses of non-reportable forms of elemental zinc. However, given quantity of elemental zinc used, the potential quantity of zinc fume or dust produced would be well below the 25,000-lb. manufacturing threshold.
1,1,1-trichloroethane	NA	The remediation of the EPCRA section 313 chemical is not considered towards any threshold activity determination.

Threshold determinations for Section 313 chemicals manufactured, processed, or otherwise used at the Darcy Corp. facility are presented on the following pages.

THRESHOLD DETERMINATION WORKSHEET

Reporting Year:

Chemical: **COPPER**

#	Mixture Name or Other Identifier	Information Source	Percent by Weight	Total Weight (lbs.)	Amount of Chemical by Activity (lbs.)		
					Manufactured	Processed	Otherwise Used
1	Hi-Copper Brass Tubing	Purchasing	90.0	100,000		90,000	
REPORTABLE SUBTOTAL						90,000	

EXEMPTION SECTION

#	Mixture Name or Other Identifier	Exemption	Note Fraction or Percent Exempt (if applicable)	Amount of Chemical by Activity (lbs.)		
				Manufactured	Processed	Otherwise Used
1	NA					
EXEMPT SUBTOTAL						
TOTAL (REPORTABLE – EXEMPT)					90,000	
REPORTING THRESHOLD				25,000	25,000	10,000

THRESHOLD DETERMINATION WORKSHEET

Reporting Year:

Chemical: **HCFC-22**

#	Mixture Name or Other Identifier	Information Source	Percent by Weight	Total Weight (lbs.)	Amount of Chemical by Activity (lbs.)		
					Manufactured	Processed	Otherwise Used
1	HCFC-22	Supplier	99.0	26,000		25,740	
REPORTABLE SUBTOTAL						25,740	

EXEMPTION SECTION

#	Mixture Name or Other Identifier	Exemption	Note Fraction or Percent Exempt (if applicable)	Amount of Chemical by Activity (lbs.)		
				Manufactured	Processed	Otherwise Used
1	NA					
EXEMPT SUBTOTAL						
TOTAL (REPORTABLE - EXEMPT)					25,740	
REPORTING THRESHOLD				25,000	25,000	10,000

THRESHOLD DETERMINATION WORKSHEET

Reporting Year:

Chemical: **MEK**

#	Mixture Name or Other Identifier	Information Source	Percent by Weight	Total Weight (lbs.)	Amount of Chemical by Activity (lbs.)		
					Manufactured	Processed	Otherwise Used
1	Paint (Refrigeration Components)	Paint booth logs	10.0	110,000			11,000
2	Adhesive	Inventory records	12.0	10,000			1,200
3	Paint (Buildings)	Contractor	5.0	20,000			1,000
REPORTABLE SUBTOTAL							13,200

EXEMPTION SECTION

#	Mixture Name or Other Identifier	Exemption	Note Fraction or Percent Exempt (if applicable)	Amount of Chemical by Activity (lbs.)		
				Manufactured	Processed	Otherwise Used
1	Paint (Buildings)	Structural Component	100			1000
EXEMPT SUBTOTAL						1000
TOTAL (REPORTABLE - EXEMPT)						12,200
REPORTING THRESHOLD				25,000	25,000	10,000

THRESHOLD DETERMINATION WORKSHEET

Reporting Year:

Chemical: **BARIUM COMPOUNDS**

#	Mixture Name or Other Identifier	Information Source	Percent by Weight	Total Weight (lbs.)	Amount of Chemical by Activity (lbs.)		
					Manufactured	Processed	Otherwise Used
1	Resin - Barium Hydroxide	Inventory records	4.0	300,000		12,000	
REPORTABLE SUBTOTAL						12,000	

EXEMPTION SECTION

#	Mixture Name or Other Identifier	Exemption	Note Fraction or Percent Exempt (if applicable)	Amount of Chemical by Activity (lbs.)		
				Manufactured	Processed	Otherwise Used
1	NA					
EXEMPT SUBTOTAL						
TOTAL (REPORTABLE - EXEMPT)					12,000	
REPORTING THRESHOLD				25,000	25,000	10,000

THRESHOLD DETERMINATION WORKSHEET

Reporting Year:

Chemical: **AMMONIA**

#	Mixture Name or Other Identifier	Information Source	Percent by Weight	Total Weight (lbs.)	Amount of Chemical by Activity (lbs.)		
					Manufactured	Processed	Otherwise Used
1	Resin	Inventory records			3,000		
REPORTABLE SUBTOTAL					3,000		

EXEMPTION SECTION

#	Mixture Name or Other Identifier	Exemption	Note Fraction or Percent Exempt (if applicable)	Amount of Chemical by Activity (lbs.)		
				Manufactured	Processed	Otherwise Used
1	NA					
EXEMPT SUBTOTAL						
TOTAL (REPORTABLE – EXEMPT)				3,000		
REPORTING THRESHOLD				25,000	25,000	10,000

THRESHOLD DETERMINATION WORKSHEET

Reporting Year:

Chemical: **ZINC (FUME OR DUST)**

#	Mixture Name or Other Identifier	Information Source	Percent by Weight	Total Weight (lbs.)	Amount of Chemical by Activity (lbs.)		
					Manufactured	Processed	Otherwise Used
1	Hi-Copper Brass Tubing	Purchasing	9.2	100,000	9,200		
2	Resin	Inventory records	1.5	300,000	4,500		
REPORTABLE SUBTOTAL					13,700		

EXEMPTION SECTION

#	Mixture Name or Other Identifier	Exemption	Note Fraction or Percent Exempt (if applicable)	Amount of Chemical by Activity (lbs.)		
				Manufactured	Processed	Otherwise Used
1	NA					
EXEMPT SUBTOTAL						
TOTAL (REPORTABLE – EXEMPT)				13,700		
REPORTING THRESHOLD				25,000	25,000	10,000